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WHAT IS ADEQUATE MEDICAL CARE?

PRESIDENT'S ADDRESS

ROGER I. LEE, M.D.
BOSTON

Somewhat over ten years ago, in 1933, Lewis Webster Jones, now president of Bennington College, and I, with the help of Barbara Jones, made an attempt to define adequate medical care in the United States for the Committee on the Costs of Medical Care. This was a pioneering effort. It was done because it seemed to us that a beginning had to be made, and it was our pious hope that from this feeble attempt might come improved and more helpful studies on adequate medical care. To our disappointment, our work has mostly accumulated dust on bookshelves.

However, there have been many clarion shouts that medical care in the United States is inadequate, here, there and elsewhere, in this disease or that condition, but as far as I know no one has attempted to redefine adequate medical care or has suggested another yardstick to measure medical care. To be sure, in very limited fields a medical writer claims occasionally that this or that procedure, usually highly technical and often surgical, is inadequate, while his own is adequate. However, in the main, when reference is made to medical care in a broad sense statements usually run as follows: "Such and such a community has inadequate medical care because there is less than 1 doctor per 1,500 inhabitants." Again in 1936 untrained investigators asked people in a house to house survey if they had medical care. If the people said "No," they were recorded as not having adequate medical care. Or if they didn't like their medical care or they thought it was inadequate, then they too were recorded as having inadequate medical care. The resulting records were broadcast all over the land and were described as indicative of a melancholy and parlous state of inadequacy of medical care and of callous neglect by the medical profession.

STATISTICS FROM THE DRAFT

More recently there have been some highly colored statements regarding the large percentage of rejections for physical defects in connection with the operation of the Selective Service act. The figures are sobering and call for careful examination and considered action. But many of these defects have no relation to medical care, adequate or inadequate. Nature does not uniformly produce perfect fruit, be it babies, puppies, calves or apples. If children are very nearsighted or astigmatic, adequate medical care demands glasses for the correction; but the Army or the Navy decides whether or not it wants such an individual. And little can be done about color blindness.

Some of these defects have a larger personal factor in their evaluation, both on the side of the examining doctor and on the side of the examined youth. If a lad is determined enough a little allergy or a little eye abnormality is often surmounted, as many fathers know.

The statistics from the draft in regard to mental and nervous conditions is of course disturbing. That is an unexplored area which is not really relevant to the discussion of adequate medical care. But I shall have something more to say on this vast and perplexing problem later on in the discussion. Certainly illiteracy is outrageous, but it is certainly not related to the problem of medical care.

SHIFTING CONCEPTS OF ADEQUATE CARE

Having participated in writing a book on adequate medical care, I am not oblivious to the difficulties involved, which include the extraordinary and continuing advances in medical science. When the book was written, serum therapy for pneumonia was the best we could offer. It was good; but it is always complicated to give intravenous therapy, except perhaps in a hospital. It is much simpler to give tablets of the sulfonamides and it is more effective. Then there was a tendency to change from sulfonamide tablets to intramuscular penicillin and now we have oral penicillin. And after penicillin what? In any event the general use of serum therapy seems almost ghostlike today. Likewise the present day treatment of venereal diseases is a changing No Man's Land.

Obstetric care has probably changed more than any other standard procedure. This progress in obstetrics has got the medical profession into a lot of trouble. The necessary anesthesia, the prompt surgical repairs, the nursing are most conveniently done in a hospital. Thus modern obstetrics ranks (roughly speaking) with catastrophic illness or operations as a major inroad on the family budget. In a generation obstetrics has entirely changed its status not merely as a medical procedure and problem but as an economic problem. Personally I happen to think that the concomitants of modern obstetrics are a part of adequate medical care. The definition changes.

Personally, again, I believe in the doctrine of the self limitation of certain diseases, including the common cold. But there are those who believe in the energetic local treatment of a cold. The difference in medical visits and dollars between the two schools of thought is very great.

Of course, we all know that luxury medicine is a factor and curiously enough is a factor when the fee-for-visit system does not prevail. It was particularly

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interesting in the days of acute doctor shortage, nurse shortage, laboratory shortage and hospital bed shortage what deletions could be made in a program of adequate medical care without real hardship. Doubtless some of our great hospitals and great medical schools have been grievous offenders in carrying out unnecessary procedures, thus encouraging the graduates in bad habits and offering a bad example to patients by furnishing superfluous medical attention. Probably the substantial majority of patients like more attention than is adequate, like to be fussed over and, surprisingly enough, are often willing to pay for it. Hence the charlatan, the quack and the cultist. Hence self medication, food fads and did I say vitamins or didn't I? Sometimes when I am feeling courageous I'm going to take a sleeping car poll. How many of the passengers do you think take a little something to help them sleep? It isn't liquid or alcoholic as in the old days, but one of the barbiturates.

No, I don't think it is luxury medicine, if the former prime minister of Great Britain is accompanied by his personal physician on his travels. I think what most of us have in mind is best illustrated by the extraordinary medical care furnished our fighting men in the battle areas in the war. The organization of that medical service was at the same time one of the wonders of the modern world and a comfort to all who had sons, husbands, brothers in this dreadful conflict. Warfare furnishes special conditions and demands special technics that are not readily transferred to the conditions of peace.

And yet already steps have been taken to make available some of these wartime technics to civil life. The returning medical officer of the Army and the Navy will think in different terms than he did as a civilian doctor. He will be used to having blood plasma always and often whole blood as therapeutic agents. Plans are already under way so that the Red Cross, which has supplied so remarkably blood plasma and whole blood to the armed forces, will continue under necessarily changed conditions, now that the war is over, to assist in furnishing blood and blood products for civilian needs.

An incident that happened during the Allied push across the Rhine is worthy of record. It was a busy day at a given blood center. Donors were lined up waiting their turn to give their blood. A man and his wife entered the scene in great distress and perplexity. Their child was sick at a nearby hospital and needed immediately several transfusions, but the hospital had no blood. Here in the blood donor center was blood, plenty of it, and their child needed the blood even as a wounded soldier needed it. Even though the blood from the donor center had to go to the armed forces, nevertheless the situation, which had arisen before, was met satisfactorily. That situation will arise many times in the future and we trust that an adequate organization will not necessitate the repetition of this drama.

I have dwelt on this particular feature because I believe that it is illustrative of trends that will alter our appraisal of adequate medical care. Plasma and whole blood not so long ago were generally given only in well equipped hospitals. Yesterday they were given on the battlefield, on the beaches, in the jungles by Hospital Corpsmen. Obviously if the materials are available, as we firmly believe they will be, they will be administered by the general practitioners at home or at the site of the accident as well as in the hospitals large and small.

DRIFT BETWEEN SPECIALISTS AND GENERAL PRACTITIONERS

In the discussion of adequate medical care, the problem of specialist service both in therapeutics and in diagnosis is always large and important. And herein are also trends and changes. It seems likely that the venereal diseases will be largely returned to the general practitioner. Certainly he is competent to treat gonorrhea with the sulfonamides. Certainly he is entirely competent to arrange for the administration of penicillin, and especially if the oral administration of penicillin materializes as a satisfactory procedure, as we now believe. Of course the last word has not been said and changes are occurring every moment, but I think that the general practitioner was a little overwhelmed and dizzy when it came to the treatment of syphilis by intravenous administration of the arsenicals. That day belongs to the past.

I have already alluded to the change in the treatment of pneumonia. The typing of the sputum, the administration of the appropriate serum intravenously generally seemed very complex to the general practitioner. A recent personal experience seems to me to be illustrative! A practitioner telephoned that he was sending a patient to the local hospital and could I see him. I asked if the patient didn't have pneumonia. No, the practitioner didn't think so but he would have an x-ray of his chest as he went by the x-ray room to his hospital room. After a while he telephoned "Well, you won't have to come out, he only has pneumonia and a leukocytosis and everything is fine." Only pneumonia; what a change!

I can remember the time when the diagnosis of pulmonary tuberculosis was both a science and an art. We practiced percussion and auscultation just as our surgical colleagues practiced tying knots. I still think there is something in it. But we all nowadays, including the patient and the family, insist on an x-ray. And your general practitioner can allay apprehensions about a continual cough by simply arranging for an x-ray of the chest. However, if the patient does happen to have tuberculosis I'll admit that the general practitioner is out of his depth. The modern treatment of tuberculosis no longer consists in rest, fresh air, milk, eggs and a desire to live but often demands one and perhaps several highly specialized forms of surgical technic. But on the other hand pulmonary tuberculosis is steadily and substantially decreasing in frequency.

Time was when the general practitioner awaited jaundice before he made the diagnosis of gallstones, and obvious bleeding before he diagnosed peptic ulcer. But nowadays the radiologist seems usually to make these diagnoses. Furthermore, by some route or other many cases of ulcer arrive in the offices of those who specialize in digestive disorders. While psychosomatic medicine bluntly states that most digestive disturbances are due to causes above the neck, nevertheless the trek goes on. The apostles of psychosomatic medicine find here the classic illustration of their philosophy.

In the cardiovascular field your general practitioner has not found the comfort from the electrocardiograph that he hoped. The interpretations of the electrocardiograms are not always simple and lucid, and subsequent therapy is not always obvious. Angina is often indefinite. Hypertension is often relative. Arrhythmias may be complicated. On the whole, whether he admits it or not or likes it or not, the general practitioner has to

depend on the specialty of cardiologists more than seems perhaps necessary.

I have given this rapid survey of certain fields in medicine with the purpose of indicating that medicine is ever changing and that the relations between the general practitioner and the specialist are always in a state of flux. The drift is not always away from the general practitioner but sometimes definitely at any given moment in his direction. These are the factors that must be evaluated in determining what is adequate medical care.

It will be noted that even if and when the general practitioner is furnished with proper and adequate x-ray equipment and interpretation, which means specialists' services, that is in some fields not sufficient. The supplementary use of certain technics or gadgets, as the electrocardiograph, in a goodly number of instances at this time does not seem to be always satisfactory.

I have not touched on the surgical specialists at all. This is largely because it seems to me at this moment that surgery is becoming a profession in itself and indeed has its own specialists. I have mentioned lung surgery, which actually is not within the province of a general surgeon. The neurologic surgeon is another example of a limited specialist within the profession of surgery.

I have deliberately omitted the relationship of psychiatry to the general practitioner and to adequate medical care. Obviously the custodial care of the manifestly insane is a problem for specialists. As the general practitioner meets this part of the problem, it is often the question of having the insane person committed to an institution.

But there are implications and imponderables far beyond the scope of this paper and indeed my ability to discuss them. The war has focused attention, too long postponed, on what is known as psychoneurosis. That problem is far too large for the number of physicians who may be regarded as having special training or interest in the field. The whole situation is rather chaotic. We have rather taken much of it for granted, as we once did the poor. And, like the weather, everybody talks about it but does nothing about it. Somehow or other in this vast field the general practitioner must play an important role. He obviously has certain advantages of familiarity with human behavior under usual family conditions and of individual relationships and actions.

DIAGNOSTIC SURVEYS IN DIAGNOSTIC CENTERS

It will be observed that I have not spoken particularly of hospitals, diagnostic centers, laboratories or clinics. Obviously major surgery will be done in a hospital. Specialized surgery, like chest surgery and neurologic surgery, will not be done in every small hospital. Adequate medical care demands not just the case and a hospital. It may demand a special hospital and a specialist within the profession of surgery. Furthermore, the x-ray equipment also obviously necessary in a hospital may be in a clinic or a diagnostic center. I have pointed out frequently that most patients who visit the Mayo Clinic never get to the hospital. In other places well known clinics are quite separate entities. In the clinic most of the diagnostic work is carried out and, if necessary, hospitalization is arranged. It is argued by some of the clinic advocates that such an arrangement is tremendously money saving. Hospital residence is apt to be expensive and, if utilized for a diagnostic survey which may be time consuming, ties up hospital space designed for quite another purpose. Perhaps hospital trustees will devise some new types of buildings within the hospital areas so that diagnostic surveys can be carried out economically for the patient and conveniently for the diagnostician.

I have not in these remarks attempted to reevaluate adequate medical care. It has been my purpose rather to make random comments on the problem and once more to express the hope that other hands will develop something far better and far more comprehensive than the pioneer effort of over ten years ago.

NEED FOR CONTINUOUS REEVALUATIONS

I appreciate the changing conditions as medical science advances with its seven league boots. I appreciate too that our social standards change. But these considerations to my mind only make such studies more imperative. There should be constant and continuing evaluations of the changing conditions. We must know what place the general practitioner and the specialist has in adequate medical care. At the moment there are trends toward specialism within specialties, particularly in surgery. Yet insulin, liver therapy, the sulfonamides and penicillin tend to return many patients to the general practitioner. Likewise there are trends in the utilization of hospitals which must be considered in evaluating medical care. Social conditions both in the home and in industry create changes to which adequate medical care is always a goal, but as we move forward we push the goal ahead.

264 Beacon Street.

POST-TRANSFUSION HEPATITIS IN BATTLE CASUALTIES

AND A STUDY OF ITS PROPHYLAXIS BY MEANS OF HUMAN IMMUNE SERUM GLOBULIN

MAJOR EDWARD B. GROSSMAN
MEDICAL CORPS, ARMY OF THE UNITED STATES
COLONEL SLOAN G. STEWART
MEDICAL CORPS, ARMY OF THE UNITED STATES
AND
JOSEPH STOKES JR., M.D.
Director, Commission on Measles and Mumps, Army Epidemiological Board
PHILADELPHIA

It has recently become increasingly well recognized that parenteral administration of whole blood or blood products to susceptible individuals may be followed by the occurrence of a disease which is clinically indistinguishable from common acute infectious hepatitis.[1] During the latter part of 1944 a large and increasing number of cases of acute hepatitis were seen at a large army general hospital within the continental limits of the United States which serves primarily as a center

From McCloskey General Hospital, Temple, Texas.

This investigation was carried out in collaboration with the Commission on Measles and Mumps, Board for the Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of the Surgeon General, Washington, D. C.

1. Propert, S. A.: Hepatitis After Prophylactic Serum, Brit. M. J. **2**: 677, 1938. Homologous Serum Jaundice, Memorandum prepared by medical officers of the Ministry of Health, Lancet **1**: 83, 1943. Beeson, P. B.: Jaundice Occurring One to Four Months After Transfusion of Blood or Plasma: Report of 7 Cases, J. A. M. A. **121**: 1332 (April 24) 1943. Morgan, H. V., and Williamson, D. A. J.: Jaundice Following Administration of Human Blood Products, Brit. M. J. **1**: 750, 1943. Turner, R. H.; Snavely, J. R., Jr.; Grossman, E. B.; Buchanan, R. N., and Foster, S. O.: Some Clinical Studies on Acute Hepatitis Occurring in Soldiers After Inoculation with Yellow Fever Vaccine, Ann. Int. Med. **20**: 193 (Feb.) 1944. Neefe, J. R.; Stokes, Joseph, Jr.; Reinhold, J. G., and Lukens, F. P. W.: Hepatitis Due to the Injection of Homologous Blood Products in Human Volunteers, J. Clin. Investigation **23**: 836, 1944.

for amputation and neurosurgical cases. During the six month period from Nov. 1, 1944 to April 30, 1945 a series of 108 cases of acute hepatitis came under the care of one of us (E. B. G.). Of these cases 103, or 95 per cent, occurred in men who had recently been wounded in action in either the European or the Pacific theater of operations. The fact that the high incidence of the disease in this group of patients was not merely a reflection of the selected population of this hospital is demonstrated by the data included in table 1.

The clinical history in the battle casualty group was strikingly uniform. The patient had been wounded in action from 44 to 167 days prior to the development of symptoms of hepatitis, with a median latent period of 91 days and an average of 92.6 days. In 84 per cent of the group the onset of the disease occurred between the 8th and the 17th week after injury. The large majority had received whole blood transfusion, blood plasma or both, shortly after injury. A number of the patients in whom the latent period was long (more than four months) had received multiple blood transfusions, some as long as two months after injury. Other factors, such as severity of injury, early amputation, previous administration of sulfonamide drugs or penicillin, extensive infection and general clinical condition of the patient at the time of onset of hepatitis, appeared to play no contributory role in the incidence of the disease. Common sources of infection and secondary contact cases were not recognized. The clinical course of the disease was that seen in the usual case of infectious hepatitis. The fatality rate was 2 per cent (two deaths).

The investigation here reported was undertaken with two purposes: (1) to test the validity of the hypothesis that the hepatitis-causing agent was transmitted by blood or plasma transfusion and (2) to extend the previously reported studies of one of us [2] on the prophylaxis of infectious (epidemic) hepatitis by injection of human immune serum globulin (gamma globulin) to this group of patients.

During the three month period from Feb. 1 to April 30, 1945 information was obtained on all battle-casualty patients admitted to this hospital. These patients were then divided into five groups: (1) those who had received neither plasma nor whole blood, (2) those who had received plasma but not whole blood, (3) those who had received whole blood but no plasma, (4) those who had received both plasma and whole blood and (5) those concerning whom adequate information was unobtainable because clinical records were incomplete and because these patients had been rendered unconscious for variable periods following injury.

TABLE 1.—*Hepatitis in Battle Casualties and in Other Patients During Period from Nov. 1, 1944 to April 30, 1945*

	Number	Per Cent of Total
1. Hepatitis cases:		
Battle casualties	103	95.4
Others	5	4.6
2. Total hospital admissions:		
Battle casualties	...	44.1
Others	...	55.9

The patients in group 1 were not given immune serum globulin injections. Groups 2, 3, 4 and 5 were each again subdivided into three subgroups, designated by the subscripts a, b and x in table 2. The x series are composed of those who had sustained their injuries more than four months prior to admission to this hospital or who presented evidence of acute hepatitis on admission and therefore were eliminated from the test and control series. Of the remaining patients, alternate men were given injections of 10 cc. of human immune serum globulin (obtained from the U. S. Army Medical Supply Depot) on admission and again in one month. No other selection of cases for globulin injection or control series was used. It was found that selection of alternate cases resulted in random sampling of battle casualties in these two groups. Of the globulin injected group, 10.5 per cent of the patients came from the Pacific theater, 35.5 per cent had been in the Mediterranean theater and 54 per cent had been in the European theater of operation but not in the Mediterranean. For the control group the figures for the geographic distribution were 7.5 per cent from the Pacific theater, 38.5 per cent from the Mediterranean theater and 54 per cent from the European theater of operation.

TABLE 2.—*Battle Casualties Admitted to the Hospital Between February 1 and April 30, 1945*

	1 Series	2 Globulin Injection	3 Total Number	4 Number with Hepatitis	5 Hepatitis Occurring Less Than 7 Days After Assignment to Control or Test Series	6 Per Cent with Hepatitis
No plasma or blood	1	0	322	1	—	0.3
Previous plasma only	2 a	+	53	1	1	1.9
	2 b	0	52	4	1	7.7
	2 x	0	17	0	—	0
Previous blood only	3 a	+	35	0	0	0
	3 b	0	35	3	1	8.6
	3 x	0	16	0	—	0
Previous plasma and blood	4 a	+	251	10	5	4.0
	4 b	0	251	33	7	13.1
	4 x	0	167	11	—	6.6
History not clear	5 a	+	45	0	0	0
	5 b	0	46	4	1	8.7
	5 x	0	29	1	—	3.4
Total			1,319	68		5.2

a. Patients given globulin.
b. Alternate controls who received no globulin.
x. Patients eliminated from test and control series.

Periodic icterus index determinations on blood serum and methylene blue tests of urine for bilirubin [3] were done. All patients showing abnormal laboratory findings or manifesting symptoms of hepatitis were examined by one of us. No patient was considered to have hepatitis on the basis of laboratory findings alone, but the diagnosis was made only when the laboratory findings were corroborated by the clinical evidence of manifest jaundice or hepatic enlargement accompanied by the usual subjective symptoms of the disease without frank clinical jaundice. Six patients (9 per cent of the cases of hepatitis developing in this group) were diagnosed as having hepatitis without jaundice. These 6 cases were proportionately distributed among the several series that have been described.

Results of these studies are summarized in table 2. The studies are still incomplete for the reason that an appreciable proportion of the cases included in this tabulation have been under observation for an insufficient period at the time of writing.

2. Stokes, Joseph, Jr., and Neefe, J. R.: The Prevention and Attenuation of Infectious Hepatitis by Gamma Globulin, J. A. M. A. **127**: 144 (Jan. 20) 1945.

3. Franke, K.: Methylene Blue, a Very Simple Practical Reagent for the Detection of Bilirubin, Med. Klin. **27**: 94, 1931. Fillinger, K., and Menkes, K.: Quantitative Bilirubin Determination in the Urine with the Methylene Blue Method, Wien. klin. Wchnschr. **46**: 133, 1933. Myers, C. P.: Use of Methylene Blue in Testing for Bilirubin in the Urine, J. Indust. Hyg. & Toxicol **27**: 52, 1945.

The data on incidence of hepatitis as related to previous blood transfusion or blood plasma administration are given in table 3. In line 1 are given the data for patients who had received no blood or plasma, in line 2 the data for patients who had been known to have received blood or plasma, and in line 3 the data for those patients to whom it is believed, but not definitely known, that blood products were given. The conclusion that the hepatitis-causing agent was blood transmitted appears inescapable.

The preliminary results of the study of prophylaxis of hepatitis by gamma globulin injection are summarized in table 4. In line 1 are given the total figures for the incidence of hepatitis to date of writing (July 25, 1945) in the a (globulin) subgroups of series 2, 3, 4 and 5 of table 2, and in line 2 the corresponding data for the b (control) subgroups. Of 384 patients who received globulin injections, 11 developed hepatitis. Two of these had clinical manifestations of the disease prior to globulin administration, and 4 developed obvious evidence of the disease 4, 5, 5 and 6 days after injection, respectively. It is possible that the immune serum globulin was administered to those patients too late in the incubation period to be of value. There was no significant clinical or laboratory evidence of attenuation of the disease in these patients. Five patients developed hepatitis more than one week after globulin injection. In all of these, although frank jaundice developed, the clinical course was very mild, suggesting that the disease may have been attenuated by globulin administration. The 44 cases (11.5 per cent) of the control series of 384 patients represents the minimum incidence of the disease in this control group. A number of these patients have been under observation for an insufficient period, and cases of hepatitis are continuing to appear in this control group.

COMMENT

The reporting of this series of cases appears important in view of the high morbidity and mortality recently experienced both in England and in the United States from hepatitis secondary to the administration of blood products in battle casualties. Also the primary reason for such a report lies in the highly significant protection against hepatitis obtained by the use of gamma globulin. Previous experience with the use of gamma globulin in three epidemics of hepatitis obtained by one of us [4] in collaboration with Capt. John R. Neefe, Capt. Sydney S. Gellis and others had clearly indicated its protective and attenuating effect in the epidemic disease, but its value had not been determined in the hepatitis resulting from blood products used in battle casualties. The cases occurring in the injected group were mild, indicating probably some degree of attenuation as a result of the gamma globulin, despite its injection at the end of an incubation period of several months. The protective effect of the gamma globulin suggests either that the agent from these blood products producing hepatitis is the same agent as that occurring in the epidemic hepatitis in which gamma globulin previously had been effective or that antibodies protective against more than one agent producing hepatitis have been concentrated in the globulin from the large pools of plasma.

TABLE 3.—*Incidence of Hepatitis Among Battle Casualties Admitted to Hospital from Feb. 1 to April 30, 1945 as Related to Previous Transfusion*

	Total Number	Hepatitis	
		Number	Per Cent
1. Received no blood or plasma	322	1	0.3
2. Received blood or plasma; no globulin given	538	51	9.5
3. Insufficient data; no globulin given	75	5	6.7

TABLE 4.—*Prevention of Hepatitis by Human Immune Serum Globulin (Gamma Globulin)*

	Total Number	Total Hepatitis		Hepatitis Occurring More Than 1 Week After Assignment to Control or Test Series	
		Number	Per Cent	Number	Per Cent
1. Total given globulin	384	11	2.9	5	1.3
2. Total control series	384	44	11.5	34	8.9

Although some evidence, as yet inconclusive, suggests that more than one agent or more than one strain of the same agent may produce a type of hepatitis which possesses in general the same clinical and pathologic picture, the data here reported would neither support nor contradict such evidence. The history of a long incubation period in the casualties included in this report and in those investigated in other hospitals in the zone of interior is probably due to the fact that those having short incubation periods were hospitalized in the European and Mediterranean theaters of operation. Short incubation periods of approximately 20 to 30 days have been noted following parenteral injection of homologous blood products in the European and Mediterranean theaters of operation and in injected volunteers in the zone of interior, but such reported occurrences have been relatively few. Further studies of these phenomena in such casualties and in human volunteers will be necessary before an understanding of the problem of single or multiple etiology can be obtained.

SUMMARY

1. A series of 103 cases of post-transfusion hepatitis occurred within a period of six months at one United States Army general hospital.

2. Data indicate that the hepatitis-causing agent was transmitted to these patients through the medium of blood plasma or whole blood transfusion.

3. Evidence indicates that the early administration of human immune serum globulin was effective in this series of cases.

4. This series of cases is to be further studied and reported at a later date.

ADDENDUM

A study similar to the one reported was initiated somewhat later at another general hospital (to be reported by Col. G. G. Duncan, A. U. S., Lieut. Col. H. A. Christian, A. U. S., and Joseph Stokes Jr.). The procedure differed only to the extent that a single injection of gamma globulin was given as compared with the use of a second injection one month after the first in the present study. In this second study the use of gamma globulin appeared to have no effect on the incidence of homologous serum hepatitis in battle casualties who had received transfusions of blood or plasma. Recently an experimental study of the neutralizing effect of one preparation of gamma globulin on one causative agent of serum hepatitis has been conducted by Capt. Sydney S.

4. Gellis, S. S.; Stokes, Joseph, Jr.; Brother, G. M.; Hall, W. M.; Gilmore, H. R., and Beyer, E.: The Use of Human Immune Serum Globulin (Gamma Globulin) in Infectious (Epidemic) Hepatitis in the Mediterranean Theater of Operations: I. Studies on Prophylaxis in Two Epidemics of Infectious Hepatitis, to be published. Stokes and Neefe.[2]

Gellis, M. C., A. U. S., Capt. John R. Neefe, M. C., A. U. S., and one of the present authors (J. S. Jr.). Under these experimental conditions (to be reported) neutralizing antibodies for this causative agent of serum hepatitis apparently were absent, the gamma globulin having no effect on the incidence of hepatitis in human volunteers injected with this agent. Thus the results of the use of gamma globulin for prevention of homologous serum hepatitis have been conflicting to date, the globulin having been very effective under the circumstances described in the present report but apparently ineffective under other conditions. Although no explanation of the conflicting results is at hand, the following factors may have been influential: (1) the possibility that immunologically different agents were concerned, (2) the possible variation in antibody content of different preparations of gamma globulin and (3) the possible beneficial effect of repeated injections of gamma globulin in view of the long incubation period of the disease (two to four months). Further studies obviously are necessary to clarify these points and to establish the place of gamma globulin in the prevention of homologous serum hepatitis.

THE RECOGNITION OF PRIMARY HYPERPARATHYROIDISM

AN ANALYSIS OF TWENTY-FOUR CASES

F. RAYMOND KEATING JR., M.D.
AND
EDWARD N. COOK, M.D.
ROCHESTER, MINN.

The discovery that hyperparathyroidism is the cause of generalized osteitis fibrosa cystica has led to a widespread assumption that hyperparathyroidism manifests itself only as a disease of bone.[1] Because osteitis fibrosa cystica is a great rarity, it has been assumed that hyperparathyroidism is equally rare. Both of these assumptions have been proved to be false but they have nonetheless persisted.

In 1934 Albright and his associates [2] at the Massachusetts General Hospital reported 17 proved cases of hyperparathyroidism, most of which they had observed during a period of two years. Analysis of these cases led them to conclude that (1) hyperparathyroidism can occur without evident disease of bone, (2) involvement of the urinary tract is a more common and more important manifestation of hyperparathyroidism than involvement of the skeleton, (3) hyperparathyroidism is relatively common and (4) it is the etiologic factor in the formation of renal calculi in an appreciable number of cases. Subsequent experience of this group of investigators has amply substantiated these conclusions.[3] By 1942 Cope [4] was able to report the remarkable total of 67 proved cases of hyperparathyroidism which had been observed at the Massachusetts General Hospital over a period of ten years. Classic osteitis fibrosa cystica had been encountered in about a third of these and minimal or atypical osseous changes had occurred in another third, while in the remainder of the cases evidence of skeletal involvement was altogether lacking.

The experience of the investigators at the Massachusetts General Hospital has been unique with regard both to the remarkably large number of patients proved to have the disease and to the frequency with which it was encountered in the absence of skeletal involvement. By contrast, there have been few case reports from other sources describing hyperparathyroidism without classic bone disease.[5] The great majority of published reports have continued to deal with patients having classic generalized osteitis fibrosa cystica, usually of severe degree.[6]

The first case of hyperparathyroidism to be observed at the Mayo Clinic was reported by Wilder [7] in 1929. For many years the diagnosis was made infrequently.[8] Alexander, Pemberton, Kepler and Broders [9] were able to collect data on only 14 cases of proved hyperparathyroidism which had been observed at the clinic between 1929 and September 1942. Considering the much greater incidence which had been encountered by Albright and his colleagues, it appeared reasonable that here as well as elsewhere the diagnosis was being overlooked. Accordingly, early in 1943 a deliberate attempt was made to improve diagnostic accuracy. To this end the collaboration of internists, urologists and surgeons was solicited.

In approximately two and a half years (Sept. 30, 1942 to Jan. 30, 1945) in 24 additional cases hyperparathyroidism has been proved at operation at the Mayo Clinic, in contrast to 14 cases observed during the preceding fourteen years. Our experience with these patients confirms fully the observations made much earlier by the Boston workers. It is our purpose in this report to analyze the diagnostic features presented by this group of cases and to emphasize again the frequency and importance of this disease.

The increase in the frequency with which hyperparathyroidism was recognized was due in part to deliberate search, particularly among patients having renal calculi and in part to careful adherence to the diagnostic

From the Division of Medicine (Dr. Keating) and the Section on Urology (Dr. Cook), Mayo Clinic.

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criteria outlined by Albright and his associates.[8] The disease was first suspected because of symptoms referable to the skeleton in 6 of the 24 cases and because of symptoms referable to renal calculi in 18 cases.

CLASSIFICATION

The patients may be divided into three groups, depending on the extent of skeletal involvement as indicated by roentgenographic examination. Group 1 includes 7 cases (29 per cent) presenting the classic picture of osteitis fibrosa cystica generalisata. Three of these patients had renal calculi, and 2 of the remainder had miliary calcification of the renal parenchyma. Group 2 includes 9 cases (38 per cent) which showed minimal or atypical demineralization of the skeleton. All of these patients had, or had had, renal calculi. Group 3 includes 8 cases (33 per cent) in which there were renal calculi but no evidence whatever of skeletal involvement. Thus disease of bone was more or less evident in some degree in 67 per cent of the cases, whereas renal calculi or calcification of the kidneys occurred in 92 per cent. We have not observed any example of a fourth group represented in Albright's series by 1 case; that is, minimal demineralization of the skeleton without renal calculi.

The average age of the patients at the time of operation was 44½ years. The youngest patient was a man of 25 and the oldest a woman of 68. There were 14 men and 10 women in the series. In the literature at large and in other series which have been reported, women have generally outnumbered men in a ratio of 3 or 4 to 1.[10] The unusual sex distribution in our series may be in part a reflection of the preponderance of renal cases in our material. Group 1 (classic bone disease) comprised 4 women and 3 men, whereas group 3 (no apparent bone disease) comprised 6 men and 2 women. One may therefore wonder whether classic bone disease is more likely to occur in women and renal stones more frequently in men.

Figure 1 shows the duration of symptoms in the three groups of cases, using the medical history as a basis for dating the earliest symptom. The average duration of symptoms in group 1 (classic bone disease) was six and a half years, in patients having minimal bone disease (group 2) thirteen years and in patients without bone disease (group 3) 6.8 years. Some implications of these data will be mentioned later. Two patients had definite histories of renal stones of twenty-six and twenty-seven years' duration, respectively; yet both these patients showed minimal demineralization of the skull as the sole evidence of skeletal involvement. By contrast, another patient had no symptom prior to a single renal colic twelve days before examination. Since this patient also was found to have multiple renal calculi and visible demineralization of the skull, it is evident in this instance that the disease must have been present considerably longer than the history would suggest.

SYMPTOMATOLOGY

The variable manifestations of hyperparathyroidism have been repeatedly emphasized.[11] The essential character of the disease was early described by Hannon, Shorr, McClellan and Du Bois,[12] by Bauer, Albright and Aub[13] and by Barr and others[14] in reports dealing with the first instances of hyperparathyroidism recognized in this country. The symptoms presented by patients having hyperparathyroidism may be divided into three groups:[15] (1) symptoms resulting from the chemical changes in the blood and urine, (2) symptoms resulting from secondary involvement of the urinary tract and (3) symptoms resulting from involvement of the skeleton.

Symptoms Associated with the Chemical Changes in the Blood.—Hyperparathyroidism is characterized by an increase of calcium and a reduction of inorganic phosphorus in serum. As one would expect, symptoms occur which represent the antithesis of parathyroid tetany. Pronounced muscular atony is found and, with it, weakness, fatigue and constipation. Anorexia, loss of weight, nausea and vomiting also are encountered. In many of the cases of advanced hyperparathyroidism with skeletal involvement reported in the literature, such general symptoms have been very severe. In the present series, however, such symptoms were not prominent.

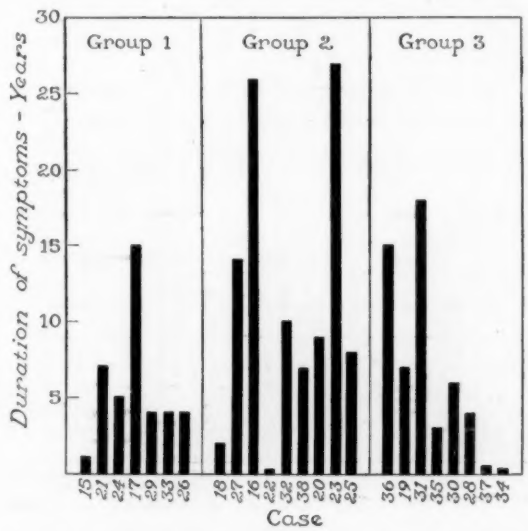

Fig. 1.—The duration of symptoms in hyperparathyroidism. Group 1 includes patients having classic involvement of bone. Group 2 includes patients having mild or minimal involvement of bone. Group 3 includes patients having no apparent involvement of bone. The duration in each case is based on the time of appearance, according to the history, of the earliest symptoms attributable to the disease. Since 14 cases observed at the Mayo Clinic have been reported previously, the first case in the present series is number 15.

In the patients having classic bone disease, general symptoms were severe in 3 cases and moderate or inconspicuous in the others. Conspicuous weakness, fatigue, nausea and vomiting occurred in 2 cases with minimal bone disease (group 2); in 4 other cases of this group these symptoms were minimal and in 3 cases entirely absent. Mild symptoms occurred in half of the patients without evident bone disease (group 3). The foregoing symptoms could be correlated roughly with the degree of hypercalcemia.

Except when they were conspicuous, the general symptoms related to hypercalcemia offered little clue to the diagnosis, largely because such symptoms are not distinctive and are frequently encountered in other conditions, particularly functional states.

10. Wilder, R. M., and Howell, L. P.: Etiology and Diagnosis in Hyperparathyroidism: A Review of 135 Proved Cases, J. A. M. A. **106**: 427-431 (Feb. 8) 1936. Jaffe.[6]
11. Jaffe.[6] Barr, Bulger and Dixon.[14]
12. Hannon, R. R.; Shorr, E.; McClellan, W. S., and Du Bois, E. F.: A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies: Metabolic Study I, J. Clin. Investigation **8**: 215-227 (Feb.) 1930.
13. Bauer, Walter; Albright, Fuller, and Aub, J. C.: A Case of Osteitis Fibrosa Cystica (Osteomalacia?) with Evidence of Hyperactivity of the Parathyroid Bodies: Metabolic Study II, J. Clin. Investigation **8**: 229-248 (Feb.) 1930.
14. Barr, D. P.; Bulger, H. A., and Dixon, H. H.: Hyperparathyroidism, J. A. M. A. **92**: 951-952 (March 23) 1929.
15. Albright, Fuller: The Parathyroids—Physiology and Therapeutics, J. A. M. A. **17**: 527-533 (Aug. 16) 1941.

Polyuria.—The excessive excretion of calcium and phosphorus in the urine which is characteristic of hyperparathyroidism may be accompanied at times by severe polyuria and polydipsia. At times these symptoms have been conspicuous enough to lead to an erroneous diagnosis of diabetes insipidus[15] (case 3, reported by Allan,[16] and case 17).[17] Conspicuous polyuria and polydipsia occurred in 11 (46 per cent) of the cases, distributed evenly among the three groups. In 16 cases (67 per cent) there was persistently dilute urine, with a specific gravity which never exceeded 1.015. This may be regarded either as the result of hypercalcinuria or perhaps as evidence of impaired renal function.

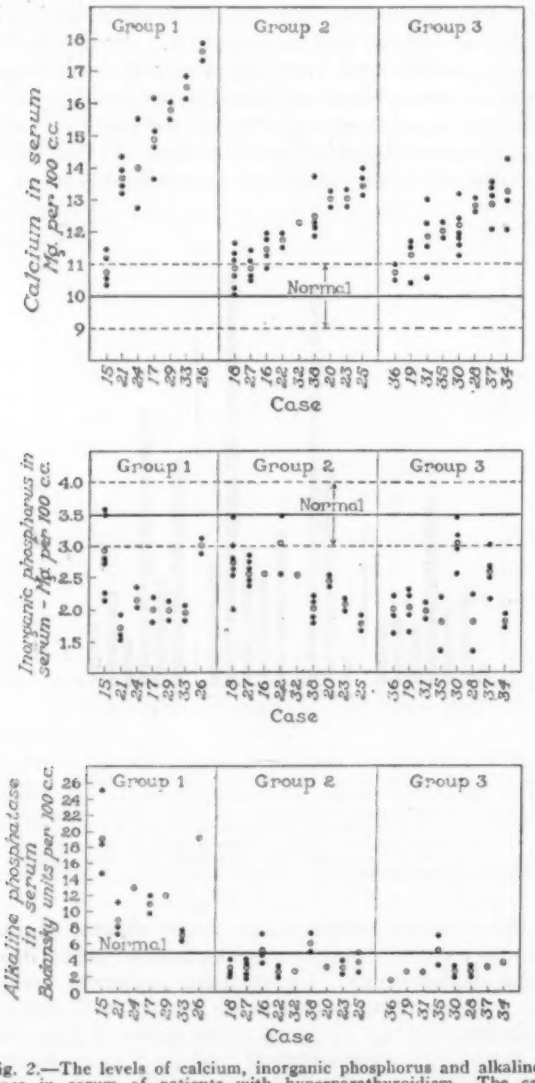
Group 1
Group 2
Group 3
Calcium in serum Mg. per 100 c.c.
Normal
Case
Inorganic phosphorus in serum - Mg. per 100 c.c.
Alkaline phosphatase in serum Bodansky units per 100 c.c.

Fig. 2.—The levels of calcium, inorganic phosphorus and alkaline phosphatase in serum of patients with hyperparathyroidism. The cases in each group are arranged in the order of average calcium values. Each vertical column represents determinations in an individual case, black dots representing individual determinations and circles the average level.

Symptoms Referable to the Urinary Tract.—The excessive excretion of calcium and phosphorus in the urine as a result of hyperparathyroidism provides conditions which favor the formation of renal calculi in the renal pelvis or even deposition of calcium in the renal tubules. Albright and his associates[18] have shown the latter to be the probable explanation for nephrocalcinosis, or diffuse calcification of the renal parenchyma, which occurs in some instances of hyperparathyroidism. Thus urinary symptoms may be produced in hyperparathyroidism (1) by urinary calculi per se, (2) by infection of the urinary tract and pyelonephritis resulting from renal calculi or (3) by impaired urinary function resulting from nephrocalcinosis.

Symptoms attributable directly or indirectly to renal calculi occurred in 18 of the 24 cases. Such symptoms did not differ in any discernible respect from those resulting from renal calculi from other causes. At first hyperparathyroidism was sought particularly in patients with a long history of renal calculi or in those found on examination to have multiple or bilateral calculi. It soon became apparent, however, that, as Albright had stated, hyperparathyroidism must be suspected in any patient having renal calculi containing calcium.

Bilateral multiple calculi occurred in 7 of the 24 cases in our series, multiple calculi limited to one kidney in 7 cases and a solitary renal calculus in 4 cases. In 2 of the latter the symptoms produced by the solitary calculus were the only clinical symptoms of hyperparathyroidism. In 1 case the presenting symptoms were those related to vesical calculi, bilateral renal calculi being found on examination. In 2 cases hyperparathyroidism was suspected from a history of bilateral renal colics alone, no renal calculi being present at the time of examination. Fourteen of the patients had previously undergone a total of twenty operations for renal calculi. Nephrectomy had been performed on 2 of these, and 1 of the 2 had a permanent nephrostomy in the remaining kidney.

Symptoms Referable to the Skeleton.—Symptoms referable to the skeleton, when present, may vary exceedingly from vague or insignificant aches and pains to the disability and pain accompanying the pathologic fractures, cysts, tumors and deformities which occur in the classic bone disease of hyperparathyroidism. Pathologic fractures occurred in 5 of the 7 cases of classic bone disease. Biopsy revealed giant cell tumors (osteoclastoma) in 2 of these. The absence of gross deformities, loss of height and other evidences of severe osteitis fibrosa cystica generalisata in the cases here reported attests only the fact that the skeletal disease did not happen to be far advanced in these cases. Skeletal pain, backache or vague aches and pains in the muscles were present in all of the cases in which there was classic bone disease (group 1), in 3 of the 9 cases in which there was minimal bone disease (group 2) and in none of the cases without roentgenographic evidence of bone disease (group 3).

DIAGNOSTIC CRITERIA

The diagnosis of hyperparathyroidism at present depends on the demonstration of (1) an increase of calcium in serum, (2) a reduction of inorganic phosphorus in serum and (3) an increased loss of calcium in the urine.

Calcium in Serum.—The normal value of calcium in serum is 10.0 mg. per hundred cubic centimeters plus or minus 1.0 mg. Many authors have asserted that for a diagnosis of hyperparathyroidism to be warranted the level of calcium in serum must exceed 12.0 or 12.5 mg.

16. Allan, F. N.: Hyperparathyroidism: Report of a Case, Proc. Staff Meet., Mayo Clin. **6:** 684-686 (Nov. 18) 1931.

17. In agreement with the practice employed elsewhere, the cases in this and subsequent reports are numbered consecutively in the order in which the diagnosis was proved. The first 14 cases to be observed at the clinic were reported by Alexander and his associates.[9] The first case comprising the present series is, therefore, number 15. Case 16 has been reported in detail elsewhere (Keating and Cook [8]).

18. Albright, Fuller; Baird, P. C.; Cope, Oliver, and Bloomberg, Esther: Studies on the Physiology of the Parathyroid Glands: IV. Renal Complications of Hyperparathyroidism, Am. J. M. Sc. **187:** 49-65 (Jan.) 1934.

per hundred cubic centimeters.[19] Albright and his associates [3] in 1937 indicated that this is not the case, and our observations show that, by adherence to such standards, many cases of hyperparathyroidism would be overlooked.

The average levels of calcium in serum in the three groups of cases are shown in figure 2. The values are definitely higher in the cases of classic bone disease (group 1) than in the groups presenting minimal or absent bone disease, although plenty of overlap occurred. In 12 of the 24 cases the average concentration of calcium was less than 12.5 mg. per hundred cubic centimeters. In 4 cases (17 per cent) the average level of calcium fell within the normal range, while in 7 cases (29 per cent) one or more individual determinations fell within the normal range. It is apparent that the elevation of calcium need be very slight indeed. Repeated determinations over a period of time are often necessary to establish the significance of slight changes in suspected cases.

The concentration of calcium and consequently its diagnostic significance depend on the concentration of serum proteins.[15] The total calcium includes two chief fractions, one of which is combined with serum protein as calcium proteinate, the other being ionic calcium. Calcium proteinate varies with alterations in the concentrations of proteins and is not primarily affected by parathyroid hormone. Ionic calcium is specifically affected by parathyroid hormone. Persons who have a lowered level of serum protein and normal total calcium may actually have significantly elevated ionic calcium. While neither fraction can be measured directly, both can be estimated from the concentration of total calcium and total protein by the use of the nomogram prepared by McLean and Hastings.[20] Certain conditions sometimes considered in differential diagnosis, notably multiple myeloma and sarcoidosis, are often accompanied by hyperproteinemia and by hypercalcemia secondary to the elevated proteins. In our experience serum proteins reduced sufficiently to mask hypercalcemia are rarely encountered as a diagnostic problem in patients having hyperparathyroidism. On the other hand, the demonstration of elevated proteins has been a relatively frequent means of avoiding an erroneous diagnosis of parathyroid disease.

Inorganic Phosphorus.—The normal level of inorganic phosphorus is 3.5 mg. per hundred cubic centimeters of serum plus or minus 0.5 mg. The average depression of the serum phosphorus is small, and considerable fluctuations of the concentration of inorganic phosphorus may occur in the same patient from time to time (fig. 2). One or more determinations fell within the normal range (3.0 to 4.0 mg. per hundred cubic centimeters) in 6 cases (25 per cent), and the average value of inorganic phosphorus was at the lower limit of the normal range in 4 cases (17 per cent). In several instances the depression of phosphorus was the best clue to the diagnosis, particularly when the value of serum calcium was equivocal.

Alkaline Phosphatase.—Albright and his associates [3] have emphasized that elevation of alkaline phosphatase is a reflection of bone disease but not of hyperparathyroidism per se. This is clearly in agreement with our data (fig. 2). Abnormal levels of serum phosphatase occurred in all of the cases comprising group 1, minimal elevation was observed in 2 of those comprising group 2 and with 1 exception all of those in group 3 had normal levels of alkaline phosphatase.

The assumption that the level of alkaline phosphatase in serum reflects osteoblastic activity in bone and not parathyroid function is further supported by the fact that, after removal of a hyperfunctioning parathyroid tumor, the phosphatase remained elevated long after the serum calcium, serum phosphorus and urinary excretion of calcium had returned to normal.

Urinary Excretion of Calcium.—The Sulkowitch test,[21] brought into wide use by Albright, has proved useful as a rough measure of excessive excretion of calcium. It has been most helpful in ruling out hyperparathyroidism. Albright [22] stated that its interpretation depends on the concentration of the urine, the previous diet, the age of the patient, the presence or absence of renal disease and other factors. In the absence of renal disease, a low level of excretion of calcium as indicated by the Sulkowitch test in a concentrated specimen of urine effectively rules out hyperparathyroidism.

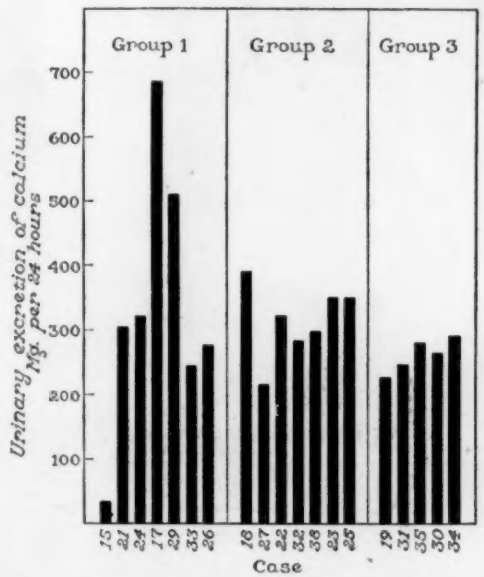

Fig. 3.—The excretion of calcium in the urine in patients with hyperparathyroidism. In most instances the quantity shown is the average excretion per day determined over a period of three to six days with the patient on a weighed diet low in calcium.

The Sulkowitch test is performed by mixing an equal volume of urine and Sulkowitch reagent. The calcium present is precipitated when the test tube is inverted a few times. A minimal precipitate is called a grade 1 response and is considered to indicate a normal concentration of calcium. More pronounced calcinuria is graded 2, 3 or 4. This test was recorded in 15 of the cases in this series. In 1 case a grade 1 response was consistently elicited in the presence of pronounced polyuria. In 5 cases the precipitate was graded 2 and in 9 cases it was graded 3.

When the diagnosis is otherwise fairly obvious, a strongly positive Sulkowitch reaction which cannot be explained on other grounds has been considered as supporting the diagnosis of hyperparathyroidism; but in most instances it is preferable to determine quantitatively the excretion of calcium under known dietetic

19. Shelling,[1] Jaffe,[6] Griffin, Osterberg and Braasch.[37]
20. McLean, F. C., and Hastings, A. B.: Clinical Estimation and Significance of Calcium-Ion Concentrations in the Blood, Am. J. M. Sc. **189**: 601-613 (May) 1935.
21. Barney, J. D., and Sulkowitch, H. W.: Progress in the Management of Urinary Calculi, J. Urol. **37**: 746-762 (June) 1937.
22. Albright, Fuller: Personal communication to the authors.

conditions. The diet used by Bauer and Aub [23] has been employed and in most cases the excretion of calcium has been determined in three successive twenty-four hour specimens of urine and the average used. The diet employed contains 125 mg. of calcium per day. Most normal persons will excrete less than 100 mg. of calcium per day on this diet. Albright [22] regards values between 125 and 200 mg. per day as highly suspicious and values in excess of 200 mg. as definitely abnormal. The values determined in the present series of cases are shown in figure 3.

Roentgenologic Findings.—In its most advanced form, osteitis fibrosa cystica generalisata resulting from hyperparathyroidism is characterized by widespread demineralization of the entire skeleton, pathologic fractures, multiple cystic regions, expanding tumors of bone and many sorts of skeletal deformities. Camp and Ochsner [24] in 1931 called attention to the characteristic

Fig. 4.—The tibia in a case showing extensive bone disease. Diffuse demineralization, typical fibrocystic appearance and subcortical absorption are shown.

roentgenologic appearance of the demineralized skeleton in hyperparathyroidism, the fibrous appearance of the long bones, the characteristic (but not of itself pathognomonic) miliary osteoporosis of the skull and the significance of subcortical cystic regions.

The cases in which there was classic bone disease (group 1) exhibited comparatively few of the most extensive bony changes. One patient had sustained almost innumerable pathologic fractures resulting from a coexisting malady accompanied by uncinate fits. Cyst-like areas in the long bones, the typical fibrous rearrangement of the trabecula, the characteristic changes in the skull and the diffuse demineralization were present in all 7 cases in this group (figs. 4, 5 and 6).

23. Bauer, Walter, and Aub, J. C.: Studies of Inorganic Salt Metabolism: I. The Ward Routine and Methods, J. Am. Dietet. A. **3**: 106-115 (Sept.) 1927.

24. Camp, J. D., and Ochsner, H. C.: The Osseous Changes in Hyperparathyroidism Associated with Parathyroid Tumor: A Roentgenologic Study, Radiology **17**: 63-69 (July) 1931.

The patients comprising group 2 were so classified because the roentgenologic appearance of the skeleton lacked the characteristic features described. In 2 of the patients minimal demineralization of the hands and skull together with subcortical absorption cysts was present. In both cases, however, very extensive

Fig. 5.—The hands in a case showing extensive bone disease (case 17). Despite relatively well calcified bones there are subcortical absorption of the phalanges and a pathologic fracture of a thumb, a biopsy of which showed osteoclastoma.

demineralization of the spinal column was accompanied by ballooning of the intervertebral disks. This observation, together with the presence of normal alkaline phosphatase, led us to surmise that in these cases hyperparathyroidism may have been complicated by senile osteoporosis and that the senile osteoporosis

Fig. 6.—The skull in a case showing extensive bone disease. In addition to miliary osteoporosis of moderate degree there are disappearance of the tables of the skull and a circumscribed area of demineralization in the frontal region. The latter is an unusual finding.

was an independent entity not related to parathyroid hyperfunction. These cases will be reported elsewhere.

The remaining 7 patients comprising group 2 were reported by the roentgenologist as showing minimal osteoporosis of the skull. Changes in the remainder of the skeleton, if present, were too mild to be recog-

nized. In several of these cases, as a matter of fact, the presence of osteoporosis even in the skull was equivocal but, in order to separate clearly those cases without any evidence of skeletal disease from those having it, any case in which there was any question of minimal bone disease was arbitrarily assigned to this group for comparison. The patients comprising group 3 are so classified because the roentgenologic appearance of the skeleton was regarded as entirely normal in density and architecture.

Dental Roentgenograms.—The dental pathologic changes in hyperparathyroidism have been discussed by Borg,[25] by Stafne and Austin [26] and more recently by Strock.[27] These writers have emphasized the fact that in a number of instances of hyperparathyroidism the presenting symptoms have been the result of changes in the oral cavity. Strock called attention to the frequency with which epulis and malocclusion occurred. He also emphasized the characteristic ground glass osteoporosis and the loss of the lamina dura which was observed in the dental roentgenogram of such patients. No increase in dental caries has been observed in patients with parathyroid disease. Albright has emphasized the usefulness of the dental roentgenogram in the diagnosis of the bone disease of hyperparathyroidism and has particularly stressed the significance of the lamina dura.

Dental roentgenograms were made in 13 of our cases. The characteristic roentgenologic changes described by Strock were observed in all 4 of the cases in group 1 for which dental roentgenograms were available, and definite, although mild, changes were present in 2 of the 3 cases in group 2. In 6 cases from group 3, however, the dental roentgenograms, like those of the skeleton, were entirely normal. The most striking change in the roentgenograms of the jaws (fig. 7) was a pronounced and diffuse derangement of the normal osseous pattern associated with evident diffuse demineralization. There was complete disappearance of the lamina dura in the 2 most severe cases in group 1 but only partial disappearance in the remainder. One case showed cyst formation.

Mild degrees of osteoporosis may be be detected more readily in the dental roentgenograms than elsewhere because the teeth, the density of which is unaffected by hyperparathyroidism, serve as indexes of opacity (fig. 7). Since disappearance of the lamina dura is observed in several purely dental conditions, this criterion is significant only if associated with diffuse demineralization and obvious derangement of the bony architecture.

Urologic Features.—Urologic examination of these patients did not disclose any findings which could be regarded as truly pathognomonic. Renal calculi, when present, were multiple or single, unilateral or bilateral (fig. 8). A majority of the patients having renal calculi also had infection of the urinary tract, often of serious proportions. Infection seemed related chiefly to the extent and duration of the renal calculi.

It has been generally assumed that renal calculi resulting from hyperparathyroidism consist of calcium and phosphorus, since both of these substances are excreted in excessive quantities. Calculi were analyzed qualitatively in 9 of our cases. In 6 of them the stones were reported to consist mostly of calcium oxalate. In 1 case the stone consisted of calcium phosphate; in another, of calcium phosphate and oxalate, and, in another, of calcium phosphate and carbonate. This surprising predominance of oxalate stones has been observed also by Albright.

In 4 cases the roentgenograms disclosed diffuse miliary calcification involving the parenchyma of both kidneys. Two of these had in addition discrete stones in the renal pelvis and a history of renal colics. In the other 2 there was no definite evidence of stones and no history referable to the urinary tract. It is presumed that these cases represent nephrocalcinosis, which

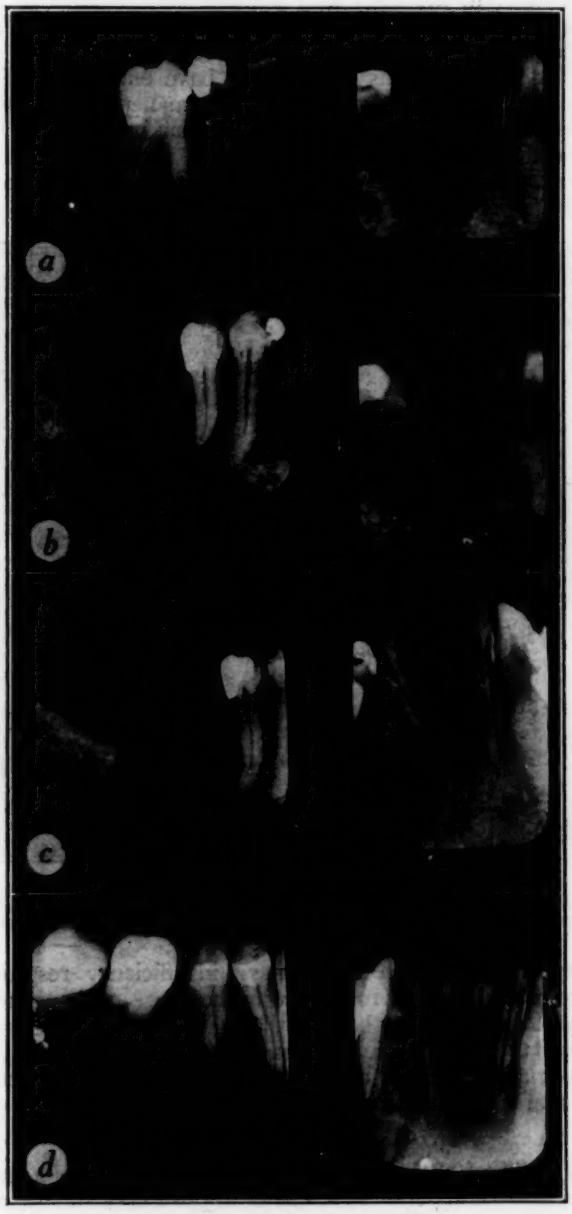

Fig. 7.—Dental roentgenograms in hyperparathyroidism: *a*, appearance of the mandible in 1939, one year before the first symptoms of hyperparathyroidism appeared; the osseous structure is normal and the lamina dura intact. *b*, the same case (case 33) in 1944 prior to removal of a parathyroid adenoma; at this time typical generalized skeletal involvement was present; the mandible shows generalized demineralization, distortion of the bony architecture and disappearance of the lamina dura. *c*, the same area in 1945, six months after removal of the parathyroid adenoma; the bone still shows abnormal structure but there has been visible recalcification and the lamina dura is reappearing. *d*, an example of more extensive dental changes encountered in another case; in addition to the changes described previously there is disappearance of the roots of the molar teeth as the result of encroachment of a cystlike tumor in the mandible.

25. Borg, J. F.: Hyperparathyroidism: A New Consideration for the Dentist, J. Am. Dent. A. **22**: 1683-1692 (Oct.) 1935.
26. Stafne, E. C., and Austin, L. T.: A Study of Dental Roentgenograms in Cases of Paget's Disease (Osteitis Deformans), Osteitis Fibrosa Cystica and Osteoma, J. Am. Dent. A. **25**: 1202-1214 (Aug.) 1938.
27. Strock, M. S.: The Mouth in Hyperparathyroidism, New England J. Med. **224**: 1019-1023 (June 12) 1941.

Albright and his associates [18] have shown to be capable of producing serious and at times irreversible renal insufficiency. Demonstrable urinary insufficiency, as evidenced by an elevated level of urea in the blood, occurred in 2 of the 4 cases. Severe renal insufficiency was encountered in another patient without visible calcification of the kidneys (patient 15); the urea clearance was 12 cc. per minute. The remarkably low excretion of calcium (40 mg. in twenty-four hours) and relatively normal blood values (calcium 10.8 mg., phosphorus 2.8 mg.) may perhaps be attributed to the impaired renal function, since by any other standard the parathyroid disease was most severe.

Albright and his associates [18] have emphasized that serious renal damage, resulting from nephrocalcinosis, secondary pyelonephritis or obstruction by stones, is the most important change produced by hyperparathyroidism and the most pressing reason for early diagnosis and treatment. Well authenticated cases have been

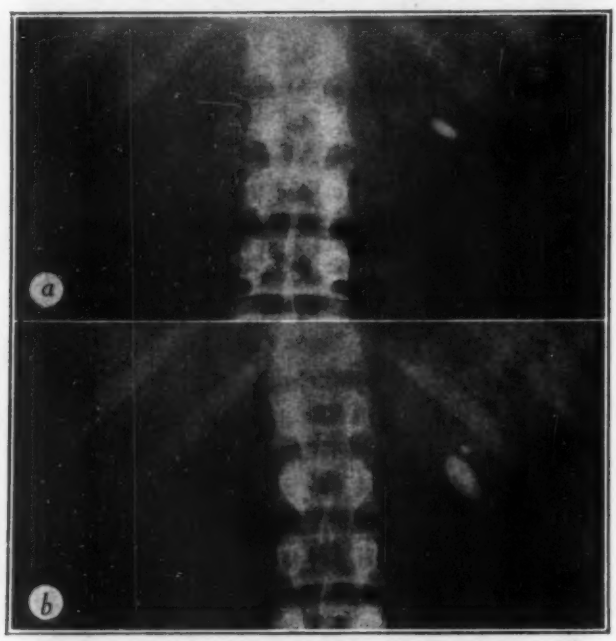

Fig. 8.—Appearance of the renal calculi in a patient with hyperparathyroidism without bone disease. The roentgenograms, made five months apart, show the rapidity with which the calculi enlarged in this instance.

reported in which the urinary insufficiency resulting from hyperparathyroidism was the cause of death, and there is reason to believe that the renal damage may lead to a fatal issue either directly [28] or indirectly [29] even after excision of the hyperfunctioning parathyroid lesion and correction of the metabolic disorder.

ANATOMIC DIAGNOSIS

Proof of the existence of hyperparathyroidism in a patient having clinical or chemical criteria of the disease depends on the anatomic demonstration by the surgeon of an adenoma or hypertrophy of parathyroid tissue. In all 24 cases in this series a parathyroid tumor was found at operation. In case 23 two tumors were found. No instance of primary hypertrophy of all parathyroid tissue [30] has been encountered in our series.

In all cases the tumor was situated in the neck, although in only 3 was it definitely palpable before operation. During the period during which these patients were observed, exploration was performed on 6 other patients for a hyperfunctioning parathyroid lesion without a tumor being found. In 2 cases both cervical and mediastinal explorations were carried out despite strong suspicions that secondary hyperparathyroidism was present. In 1 of these parathyroid biopsy showed secondary hyperplasia, and despite the absence of pathologic proof we suspect that a similar condition may have been present in the other. In another 2 cases evidence of hyperparathyroidism was clearcut, and despite the lack of surgical findings it is felt that the diagnosis may be still correct. In these cases it is thought likely that a tumor might be located in the mediastinum, but in neither case has mediastinal exploration thus far been undertaken. In the remaining 2 cases exploration was undertaken because of severe and prolonged nephrolithiasis and minimal chemical changes in the blood and urine. The failure to find parathyroid tumors plus the inconclusive character of the chemical evidence leaves considerable doubt regarding the diagnosis of hyperparathyroidism.

None of the tumors removed in our series were located in the mediastinum. It is possible that a mediastinal lesion is present in the 2 patients mentioned previously. In addition, the persistence of signs and symptoms of hyperparathyroidism in 1 of the patients from whom one tumor was removed is taken as suggesting that an undiscovered mediastinal tumor may also have been present. There has not thus far been an opportunity to confirm or disprove this supposition in these 3 cases by mediastinal exploration. In Cope's large experience [31] mediastinal lesions have been encountered in 20 per cent of patients having hyperparathyroidism. We have no ready explanation for the apparent infrequency of mediastinal lesions in our material.

Histologically the tumors examined contained all of the types of cells common to the normal parathyroid gland, although one or another of these usually predominated. No evidence of extension, invasion or distant metastasis was observed. Disagreement exists as to the histologic classification of these growths.[32] Hyperfunctioning parathyroid tumors which show unequivocal clinical evidences of malignancy do occur but are exceedingly rare. Alexander and his associates [9] discussed cellular changes, which, in their opinion, warranted a diagnosis of adenocarcinoma in 13 of the 14 cases of parathyroid tumor in their series. Castleman and Mallory [33] have observed similar cellular changes but do not consider them to be sufficient evidence on which to make a diagnosis of carcinoma. They classify all the tumors which they have observed as benign adenomas. Irrespective of the different interpretations given to the cellular characteristics of these growths, it is generally agreed that the great majority of them are clinically benign and lack the clinical characteristics usually associated with malignant neoplasms. They rarely recur, invade or metastasize, but there have been a very few isolated instances in which distant

28. Churchill, E. D., and Cope, Oliver: Parathyroid Tumors Associated with Hyperparathyroidism, Surg., Gynec. & Obst. **58**: 255-271 (Feb. 15) 1934. Downs and Scott.[5]

29. Mayer, Sidney, Jr.: Nephrocalcinosis and Hypertension Following Hyperparathyroidism: Terminal Dissecting Aneurysm, Bull. Johns Hopkins Hosp. **68**: 319-328 (April) 1941.

30. Albright, Fuller; Sulkowitch, H. W., and Bloomberg, Esther: Hyperparathyroidism Due to Idiopathic Hypertrophy (Hyperplasia?) of Parathyroid Tissue: Follow-Up Report of 6 Cases, Arch. Int. Med. **62**: 199-215 (Aug.) 1938.

31. Cope, Oliver: The Surgery of Subtotal Parathyroidectomy, New England J. Med. **213**: 470-474 (Sept. 5) 1935; Surgery of Hyperparathyroidism: The Occurrence of Parathyroids in the Anterior Mediastinum and the Division of the Operation into Two Stages, Ann. Surg. **114**: 706-731 (Oct.) 1941.

32. Case Records of the Massachusetts General Hospital (Cabot Case 31091), New England J. Med. **232**: 255-256 (March 1) 1945.

33. Castleman, Benjamin, and Mallory, T. B.: The Pathology of the Parathyroid Gland in Hyperparathyroidism: A Study of 25 Cases, Am. J. Path. **11**: 1-72 (Jan.) 1935.

metastasis or local recurrences have eventually been observed.[34]

Following surgical ablation of the parathyroid lesion, the level of calcium in serum falls rapidly to normal in a day or two (fig. 9). The level of inorganic phosphorus returns to normal more gradually. When these changes do not occur, one can suspect that the hyperfunctioning tissue has not been completely removed.

Postoperative Parathyroid Tetany.—Symptoms of tetany sufficiently noticeable to require treatment occurred in 4 of the cases of classic bone disease. In only 1 was the tetany severe; in the remaining 3 it was so mild that treatment with small quantities of calcium by mouth promptly controlled it. Minimal symptoms of tetany (transient tingling, numbness or positive Chvostek's sign) not requiring treatment occurred in 2 other cases of classic bone disease, 2 cases of minimal bone disease and 4 cases without evident bone disease. In the remaining 50 per cent of the cases (1 in group 1, 7 in group 2 and 4 in group 3) there were no symptoms of tetany whatever.

The only instance of severe and intractable tetany occurred in the patient with the most obvious osseous disease and the highest levels of alkaline phosphatase. Albright [15] stated that he has encountered this dangerous complication only in such patients, usually persons in whom the level of alkaline phosphatase before operation exceeded 20 Bodansky units.

The mild or minimal degrees of tetany which sometimes occur transiently for a few days after operation may reflect a temporary state of hypoparathyroidism (relative or absolute) resulting from the functional atrophy or hypoplasia of the remaining parathyroid tissue. On the other hand, such symptoms may represent the reaction of the body to a sudden shift of the equilibrium of calcium and phosphorus to which it had previously been adjusted.

The severe and intractable tetany encountered in cases of severe bone disease appears to be of quite a different character. In these cases the skeleton is the site of intensive osteoblastic activity as well as demineralization. Albright suggested that extirpation of the parathyroid lesion brings to a halt the release of calcium from bone but does not immediately affect the intensive osteoblastic activity. This persistent attempt at repair of bone appears to create a situation in which the hungry bones seize on all the calcium available with such avidity that disastrous tetany results.

COMMENT

To an unparalleled degree the diagnosis of hyperparathyroidism requires that a special search be made for the condition. The early symptoms are notoriously vague and seldom pathognomonic, and in many cases without evident bone disease there may be no symptoms aside from those produced by renal calculi. In other words, until the disease manifests itself by something fairly spectacular, such as renal colic, there is little likelihood that it will be recognized early.[35] When the chemical abnormalities in the blood and urine are conspicuous, the diagnosis, once suspected, can be established with ease. In many cases, however, the chemical changes are minimal and their significance cannot be ascertained without repeated analysis of the blood and urine and prolonged observation of the patient. Conversely, in many suspects who do not have the disease we have found it difficult to rule out hyperparathyroidism except by prolonged study.

Barney and Mintz [36] stated in 1936 that hyperparathyroidism was the etiologic factor in 4 to 5 per cent of the cases of renal calculus which they observed. In 1938 Griffin, Osterberg and Braasch,[37] from the routine analysis of serum calcium and phosphorus in cases of renal calculi, came to the conclusion that the incidence of hyperparathyroidism in such cases was less than 0.2 per cent. Subsequent experience indicates that this figure is too low. In retrospect it is now apparent that, using the criteria then employed (namely single determinations of calcium and phosphorus and too broad a conception of "normal" values), many cases of hyperparathyroidism would have been overlooked.

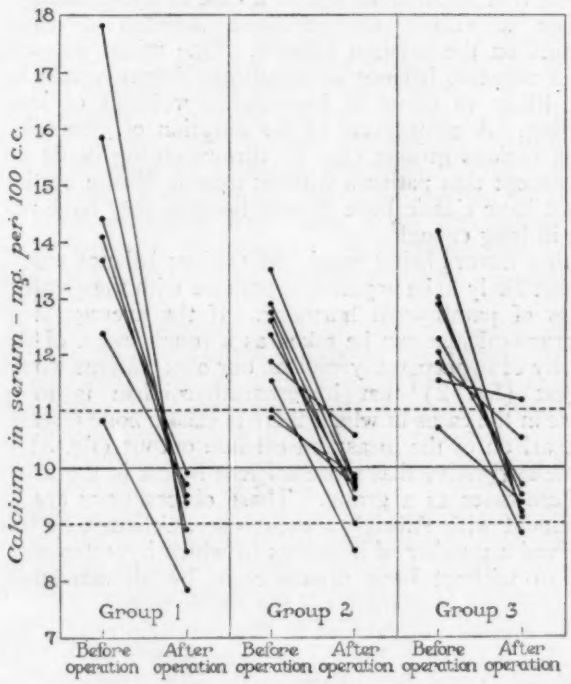

Fig. 9.—The changes in the average level of calcium in serum before and after removal of a parathyroid tumor. Each point represents the average of numerous determinations made, in most instances, over a period of several weeks. In 1 case (case 19) in group 3 no significant change in serum calcium occurred following operation. The level of inorganic phosphorus and excretion of calcium were also unchanged, and this has been assumed to indicate that a second tumor is probably present.

Cope has stated that between 10 and 15 per cent of the patients with renal calculi investigated personally by himself or by Albright are eventually proved to have hyperparathyroidism as the cause. No definite conclusion can be drawn from our data as to what proportion of the renal calculi seen at the clinic are the result of hyperparathyroidism. The cases in this report represent an incidence of hyperparathyroidism in approximately 2 per cent of the patients seen with renal calculi during the same period.[38] The incidence would have been higher had all patients with renal calculi been investigated thoroughly during the period covered by this report. Regardless of what figure is eventually deter-

34. Gentile, R. J.; Skinner, H. L., and Ashburn, L. L.: The Parathyroid Glands: Malignant Tumor with Osteitis Fibrosa Cystica, Surgery **10**: 793-810 (Nov.) 1941. Meyer, K. A., and Ragins, A. B.: Carcinoma of the Parathyroid Gland, ibid. **14**: 282-295 (Aug.) 1943.

35. Albright has discussed the interesting possibility that hyperparathyroidism might be encountered in the absence either of skeletal involvement or of renal calculi. We have recently observed such a case, in which hypercalcemia, hypophosphatemia and hypercalcinuria were discovered quite by accident. After prolonged observation, a parathyroid tumor was removed. There were no symptoms or signs whatever which could be attributed to the hyperparathyroidism.

36. Barney, J. D., and Mintz, E. R.: The Relation of the Parathyroid Glands to Urinary Lithiasis, J. Urol. **36**: 159-167 (Aug.) 1936.

37. Griffin, Miles; Osterberg, A. E., and Braasch, W. F.: Blood Calcium, Phosphorus and Phosphatase in Urinary Lithiasis: Parathyroid Disease as an Etiologic Factor, J. A. M. A. **111**: 683-685 (Aug. 20) 1938.

38. Cook, E. N., and Keating, F. R., Jr.: Unpublished data.

mined, it is apparent that hyperparathyroidism is an important and often neglected consideration in the management of patients with renal calculi. On the other hand, renal calculi have many causes and it is obvious that for every case of renal calculi found after careful study to be a consequence of hyperparathyroidism there will be many others in which this diagnosis can be excluded.

In approximately 10 per cent of all cases of renal calculi recurrent or multiple calculi eventually develop. It is reasonable to suppose that hyperparathyroidism may prove to be a factor of considerable importance in this group of cases. A persistent search for parathyroid disease will materially simplify the management of some patients seen with this difficult and serious problem.

Aside from its clinical importance, hyperparathyroidism without evident bone disease provokes speculation as to the relation of the parathyroid hormone to bone metabolism. Irrespective of other considerations it is evident that whether or not in a case of hyperparathyroidism a visibly demineralized skeleton develops depends on the calcium balance. One might suppose that a negative balance of significant degree would be most likely to occur in hyperparathyroidism of long standing. A comparison of the duration of symptoms in the various groups (fig. 1) throws strong doubt on the concept that patients without osteitis fibrosa cystica do not have classic bone disease because they have not been ill long enough.

Other factors being equal, the calcium balance would be most likely to be negative in patients with the greatest excess of parathyroid hormone. If the average level of serum calcium can be taken as a rough index of the severity of hyperparathyroidism, our observations would suggest (fig. 2) that hyperparathyroidism is more severe in the cases in which there is classic bone disease. Comparison of the measured calcium output (fig. 3) is a little suggestive that more calcium is lost in the urine in these cases as a group. These observations are in agreement with Albright's experience, although he has observed a number of instances in which hyperparathyroidism without bone disease was, by all standards, just as severe as examples of the classic type.

The quantity of calcium in the diet also affects the probable calcium balance. Persons with a high level of calcium in the diet (for example, milk drinkers) are less likely to have a negative calcium balance in the presence of hyperparathyroidism than persons whose intake of calcium is low. Albright has felt that this factor accounted for the absence of bone disease in his patients. However, we have seen a number of such patients whose previous diet contained calcium in relatively small quantities. The existence of a relatively intact skeleton in those patients implies calcium equilibrium in the presence of sustained hypercalcinuria, despite small quantities of ingested calcium. In these instances calcium equilibrium may be aided by more efficient absorption of calcium from the gastrointestinal tract. Whether such increased efficiency of absorption is fortuitous or related to the parathyroid disease would be interesting to discover.

SUMMARY

Twenty-four cases of hyperparathyroidism have been observed at the Mayo Clinic in a period of less than two and a half years. In the preceding fourteen years only 14 cases were encountered. The increased incidence is entirely a reflection of a higher index of suspicion and revision of the criteria necessary to make the diagnosis.

In 7 of these cases there was classic osteitis fibrosa cystica generalisata. In 9 there was mild or atypical bone disease and in 8 there was no evidence of bone disease whatever. Calcification of the kidneys or renal calculi occurred in 22 of the 24 cases, an incidence of 92 per cent. In 18 cases (75 per cent) symptoms produced by renal calculi were the chief clue to the diagnosis.

The diagnosis depends on the demonstration of an increase of calcium and a reduction of inorganic phosphorus in the serum as well as increased excretion of calcium in the urine. These changes may be slight, and prolonged study is frequently required to establish their significance.

On the basis of these data we wish to reemphasize the conclusions of Albright and his colleagues that (1) hyperparathyroidism is more common than generally supposed, (2) renal involvement is more frequent and diagnostically more important than osseous involvement and (3) every patient who has renal calculi should be suspected of having hyperparathyroidism until the contrary is clearly proved or until some other etiologic factor clearly can be demonstrated.

RELAPSING FEVER

REPORT OF A SPORADIC OUTBREAK, INCLUDING TREATMENT WITH PENICILLIN

CAPTAIN WILLIAM C. TAFT
AND
CAPTAIN JOHN B. PIKE
MEDICAL CORPS, ARMY OF THE UNITED STATES

Relapsing fever in the United States is a sporadic disease, and seldom does the opportunity present itself to study the clinical manifestations and therapeutic problems which arise in a significant number of cases. During August and September 1944 and April and May 1945, 11 proved cases of relapsing fever were observed and treated at an army hospital in Texas. These 11 cases demonstrated several interesting and important features from a diagnostic and therapeutic standpoint. Among these features to be discussed in detail are (1) the difficulties in diagnosis, (2) the high incidence of neurologic involvement and (3) the ineffectiveness of the accepted treatment in contrast to the striking response obtained with newer methods of therapy.

GENERAL CLINICAL PICTURE

Six patients entered the hospital with an admission diagnosis of "nasopharyngitis"; 3 had diagnoses of "hyperpyrexia," "recurrent malaria" and "headache and nausea," 1 entered the surgical service with cellulitis of his left index finger and developed his first febrile episode while undergoing treatment of the cellulitis and 1 entered with scarlet fever and developed an attack of relapsing fever while acutely ill with the former disease.

All the patients, except the final one whose presenting symptoms were those of scarlet fever, gave a history of a sudden onset of illness with weakness, vertigo, fever, headache and backache on the day prior to admission. Six had nausea and 4 vomited. On admission all appeared to be acutely ill, with extreme prostration. They complained bitterly of violent frontal headache, fever, backache and muscular weakness. Physical examination revealed a flushed face, mildly injected pharynx, temperature 104-105 F., pulse rate 120-130 per minute and respiratory rate 20-24 per minute. Three patients

had abdominal tenderness, periumbilical and in the right and left lower quadrant and 3 had abnormal neurologic signs consisting of nuchal rigidity, a positive Kernig's sign and absent abdominal reflexes. Blood counts varied from normal to an initial leukocytosis of 17,000 with a concomitant increase in polymorphonuclear leukocytes. Urinalyses were essentially negative. In no case were the abnormalities found on physical examination or preliminary laboratory work commensurate with the severity of the clinical picture.

Three or four days after the onset of symptoms the fever, headache, tachycardia and backache suddenly disappeared and the patients felt well. At the end of the first febrile episode, 7 of the 11 patients had a palpable spleen. On the second or third day after the temperature returned to normal, 5 of the patients developed a well defined skin eruption.

From the termination of the first febrile episode, the patients were asymptomatic for six to eight days. They then began to complain of headache, backache, weakness and drowsiness and within a few hours they had high fever, prostration and a clinical picture identical with that on admission. This second-episode ran essentially the same course as the first, with the exception that the signs lasted twenty-four to forty-eight hours while the symptoms persisted for a variable number of days. The patients continued to complain of backache, headache and weakness, although physical examination at this time revealed no abnormalities. In 10 of the cases the first two febrile episodes were similar. In the final case, in which both scarlet fever and relapsing fever were present, no second episode occurred. Thereafter the course of the disease varied somewhat, being modified apparently by treatment. The later stages of the disease will be described when the treatment is discussed.

Prominent in the general clinical picture was the prolonged course and long convalescence of the patients treated with oxophenarsine hydrochloride (mapharsen). No patient was hospitalized for less than one month. The longest period was one hundred and ten days. This patient developed mumps during his convalescence, which increased his hospital stay somewhat. Most of the patients were in the hospital or convalescent training program for fifty to sixty days. The reason for the long hospitalization was chiefly the profound asthenia, which persisted long after all real symptoms and signs of the disease had disappeared. During convalescence, patients were mentally depressed, felt weak, had frequent headaches and backaches and felt that they were not well enough for duty.

In a number of the individual cases there appeared some specific clinical manifestations which will be discussed here.

On the second or third day following the termination of the first febrile episode, 5 of the patients developed a skin eruption. This consisted of dime (18 mm.) to quarter (24 mm.) sized rose red spots which appeared on the trunk, legs and arms. These lesions were circular, were sharply demarcated, blanched on pressure and were not elevated above the surrounding skin. They had the appearance of an erythema multiforme and persisted for twenty-four to forty-eight hours.

Significant neurologic manifestations appeared in 5 of the patients. Headache, backache, nuchal rigidity, absent abdominal reflexes and fever were so prominent as to suggest a diagnosis of meningitis. Spinal fluid examination on these patients did not substantiate this suspected diagnosis. In several patients signs of meningeal irritation appeared during more than one of the recurrent attacks. Not only was there evidence of neurologic disease early, but in 5 of the patients an important neurologic complication of relapsing fever presented itself during the later stages of the disease. This consisted of paralysis of the seventh cranial nerve, occurring after the second or third relapse. It appeared approximately forty-eight hours after the termination of the febrile episode. Two of the patients had a right facial palsy, 2 a left facial palsy and 1 a bilateral facial palsy.

DIAGNOSIS AND LABORATORY FINDINGS

The diagnosis of the disease in the initial or sporadic case is difficult. It can be established only by finding the causative organism, which was in these cases the spirochete Borrelia recurrentis. The spirochete may be found by dark field examination or stained smear of the patient's peripheral blood. In these cases the spirochete was found in the peripheral blood only during the febrile episode with the patient's temperature above 102 F. In all patients the spirochete was found both on dark field examination and by examination of thick and thin smears stained with Wright's stain.

On 1 patient a biopsy of one of the skin lesions was performed and sections stained by Levaditi's method revealed the causative spirochetes in the superficial layers of the dermis. It is interesting to note that these spirochetes were found in the skin during an afebrile period of the disease. In no other case were spirochetes demonstrated anywhere during an afebrile period.

In addition, various other laboratory studies were done. In no case was the spirochete found in the urine or spinal fluid either by direct examination or by mouse inoculation. Blood cultures were negative. Agglutinations with proteus OX19 (Weil-Felix reaction) were negative. Blood and spinal fluid Wassermann and Kahn reactions were negative.

Blood counts are in no way specific, and in these patients the initial white blood count ranged from 5,850 with 65 per cent polymorphonuclears to 17,000 with 74 per cent polymorphonuclears. Five of the 11 patients had on admission white blood counts below 10,000, with normal differentials.

Sedimentation rates were determined in 4 cases, and in all were rapid. Rates ranged from 18 to 40 mm. per hour and quickly returned to normal with subsidence of the disease.

Six patients showed a 1 plus albuminuria with a few red and white cells. Repeat urinalyses were essentially negative.

Lumbar punctures were accomplished in 5 patients. In 2 the spinal fluid was normal, and neither of these patients developed any neurologic complication. The remaining 3 cases presented spinal fluids with abnormally high protein values, 120 and 60 and 56 mg. per hundred cubic centimeters respectively. These 3 patients, together with 2 others on whom no lumbar puncture was done, developed seventh nerve palsies, suggesting that there may be some correlation between the presence of abnormal amounts of protein in the spinal fluid and subsequent neurologic involvement.

TREATMENT

The treatment described for relapsing fever is the intravenous injection of an arsenical preparation given most effectively before the fastigium of a febrile episode is reached. According to most of the available literature, such treatment supposedly terminates the attack and

prevents additional relapses. Occasionally the arsenical has needed reinforcement by intramuscular bismuth, but in these cases supposedly adequate treatment was neither so simple nor so effective.

Seven of the patients received 0.04 Gm. of oxophenarsine hydrochloride intravenously at the beginning of a relapse, before the temperature had reached its expected peak. In all 7 cases the results were spectacular. The patient immediately had a chill, accompanied by extreme malaise, apprehension, nausea, vomiting and temperature rise to 104 to 105 F. The symptoms and signs did disappear about eight hours following the administration of the arsenical, thereby shortening the relapse. Although this single dose of oxophenarsine hydrochloride shortened the acute episode, it did not ordinarily prevent subsequent ones. After the first two relapses the periods of time between them began to vary, each occurring from seven to fourteen days after the preceding one. They also began to vary in intensity. In most cases after the third relapse the subsequent ones showed less febrile reaction, but the complaints of headache, backache and weakness were as severe as during the first few episodes. Eventually many of the patients had what appeared to be "symptomatic" relapses. These were periods of time lasting twenty-four to forty-eight hours during which patients had severe headache, backache and weakness but had normal temperature, pulse and respirations. These symptoms occurred just at the time of the expected relapse. During these symptomatic relapses several had spasm of the muscles of the lower part of the back.

After the patients had had several single doses of oxophenarsine hydrochloride and still continued to relapse, it was decided to give a course of arsenic and bismuth therapy. Five of the patients received this. It consisted of oxophenarsine hydrochloride 0.04 Gm. intravenously twice weekly and bismuth subsalicylate intramuscularly once weekly for three weeks. After this course was begun none of the patients had febrile reactions, but all had one or more symptomatic relapses. None had recovered from the disease when this course was finished.

In 1 case an injection of oxophenarsine hydrochloride during each of the first two febrile episodes terminated the disease. In another case a single injection of oxophenarsine hydrochloride during the third relapse cured the patient. The first two febrile episodes in this patient had been undiagnosed. In a third case oxophenarsine hydrochloride was given during the first relapse, three days later, and during the second relapse. Following these three injections the patient gradually improved but required three weeks to become symptom free. The remainder of the arsenic treated patients did not respond as well as this and continued to relapse. Since oxophenarsine hydrochloride, even in combination with bismuth, proved to be inadequate in controlling the disease and its debilitating effect, penicillin was tried on the last patient in the 1944 series. On Oct. 2, 1944 this patient received 20,000 units every three hours intramuscularly for a total dosage of 100,000 units. The penicillin was given during a relapse. This amount had no apparent effect on this relapse nor did it prevent subsequent ones. This patient had a total of six relapses, each of diminishing intensity after the first three, which were identical. It was felt at the time that this was a small dose of penicillin, but a larger amount of the drug was not immediately available. Although this penicillin treatment was a failure, it was still thought that adequate dosage with penicillin would prove effective. Accordingly when the last 2 patients of this series were encountered, penicillin was again used. These last 2 patients appeared in April and May 1945 and each received 40,000 units of penicillin intramuscularly every three hours for sixty doses, making a total dosage of 2,400,000 units. The immediate response to the first two injections of penicillin was a sudden increase in fever and malaise and a feeling of apprehension. This appeared to be a Herxheimer reaction, possibly due to the sudden destruction of large numbers of spirochetes. Both patients were afebrile within seventy-two hours after starting penicillin, and neither developed febrile or symptomatic relapses thereafter. All signs of the disease rapidly disappeared during the therapy. The splenomegaly quickly regressed, and the patients had recovered within two weeks after the penicillin therapy was completed.

The last patient treated had scarlet fever concomitantly with his relapsing fever. Penicillin in this case not only was curative for his relapsing fever but was apparently beneficial to his scarlet fever. Intravenous arsenicals were probably contraindicated in this patient, and untreated relapsing fever in a patient acutely ill with scarlet fever might well have produced serious consequences.

The remaining points of importance in the therapeutic management are obvious: symptomatic relief of headache, backache and malaise by codeine and acetylsalicylic acid, the maintenance of adequate fluid balance and the full utilization of physical therapy for those patients who developed Bell's palsy. Most of the facial palsies responded to physical therapy within two weeks, but one lasted two months. Recovery was eventually complete in all cases.

EPIDEMIOLOGY

Epidemiologic studies were done after the diagnosis of relapsing fever was made. It was known that the chief carrier of the spirochete of relapsing fever in Texas is the tick. It was not known where to find the infected ticks. Close questioning disclosed that all patients suffering from the disease had, shortly before their admission, been camping at a bivouac area near the army field where the cases appeared. The bivouac area was explored and many ticks of all ages and sizes were found. The ticks were living in the earth around the sides and in the floors of small animal burrows. The ticks were all of one species and were identified as Ornithodorus turicata, a tick common in Texas. None of the patients gave a history of tick bite, but all gave a history of sleeping on the ground in one area of the bivouac on the sixth or seventh day prior to the beginning of their illness. In almost all cases it was the sixth day. This offered some information on the incubation period of the disease as well as indicating the area from which the infection came. Eventually ticks infected with the spirochete of relapsing fever were found in that area.

COMMENT

Relapsing fever in this country in general is not an important disease except to the individual who contracts the infection. If untreated or inadequately treated, the morbidity is great. The patient faces from two to six or more severe febrile episodes over a period of a month or more and in addition a long period of mental depression, muscular asthenia, headache and backache.

In this group of patients, arsenical treatment was not ideal in combating the Texas strain of relapsing fever. In sharp contrast to this method of treatment, penicillin in large doses gives promise of a more satisfactory

therapeutic result. It has in 2 instances produced a rapid subsidence of symptoms and signs, prevented subsequent relapses and eliminated the protracted convalescence characteristic of patients otherwise treated.

The dosage of 2,400,000 units was chosen arbitrarily because of its remarkable success in the treatment of another spirochetal disease—syphilis. Smaller amounts might be sufficient to effect a cure, but the opportunity to test the efficacy of various doses has not yet presented itself.

No serious complications incident to the disease or to the penicillin treatment were encountered.

CONCLUSIONS

Consideration of these 11 cases of relapsing fever suggests the following conclusions:

1. Penicillin in a dosage of 2,400,000 Oxford units is effective in the treatment of the disease.
2. Penicillin reduces the length of disability from the disease to a minimum.
3. Arsenicals, with or without bismuth, produced disappointing therapeutic results.
4. Spirochetes may be demonstrated in the skin during an afebrile period.
5. Neurologic disorders play a prominent role in the natural history of the disease.

THE TREATMENT OF LUNG ABSCESSES WITH PENICILLIN

REPORT OF FOUR CASES

CHARLEY J. SMYTH, M.D.
AND
THOMAS H. BILLINGSLEA, M.D.
ELOISE, MICH.

Despite recent advances in chemical and surgical therapy, the treatment of lung abscesses remains an important problem. The sulfonamides, pneumothorax, phrenic nerve avulsion, bronchoscopy and postural drainage have all proved to be of definite, but limited, value. The surgical treatment of lung abscesses, particularly the chronic type, still is attended by a high fatality rate. The sulfonamides have not proved to be effective except in the control of the associated pneumonitis. In the relatively short time since penicillin has been available, a few lung abscesses have been treated with this new drug. The response in some of these cases has been excellent. Recently 4 patients suffering from lung abscesses have been treated in the Wayne County General Hospital, Eloise, Mich., with penicillin. Our purpose in this communication is to review the previously reported cases of lung abscesses treated with penicillin and to present the cases which we have observed during the past twenty months.

In a review of the literature we have found reference to 31 cases of lung abscesses which have been treated with penicillin. Thirteen were cured, 8 improved and 10 were not benefited. The accompanying table summarizes these cases and includes most of the pertinent data presented in each case in the original report.

We have been encouraged by the satisfactory recovery of 4 patients with lung abscesses whom we have treated with the long-continued intramuscular administration of penicillin. Two of the patients had acute pulmonary infection with cavitation, 1 developed a lung abscess following an embolus from thrombophlebitis of the leg and the other patient had chronic lung abscesses.

The treatment in each of these cases has consisted of penicillin given every three hours day and night. The site of the injections has been the deltoid and gluteal muscle groups and the individual injections were made using these sites in rotation. The following is a summary of these cases:

REPORT OF CASES

CASE 1.—*History.*—M. J., a white man aged 39, a barber, was admitted to the hospital on March 27, 1945 with a cough and weakness for about three weeks. For a few days he had had symptoms which he thought were due to a "head cold." He had noticed generalized aches and pains and at times he felt feverish. At one time he recorded his temperature at 103 F. The cough became increasingly productive and the day prior to admission he coughed up a half cup of dark brown sputum. Since the onset of symptoms he had had no appetite and had lost 15 pounds (6.8 Kg.) in weight.

Physical Examination.—On admission the temperature was 101 F., the respiratory rate 24 per minute and the pulse rate 108 per minute. The patient was pale but did not appear acutely ill. There was increased tactile fremitus and impaired resonance over the right upper lobe posteriorly, associated with inconstant crepitant rales. The breath sounds over this area were bronchovesicular in quality. The remainder of the physical examination was essentially negative.

Laboratory Data.—The hemoglobin was 12.0 Gm., the red blood cell count 3,560,000 per cubic millimeter and the white blood cell count was 13,150 per cubic millimeter. The sputum was negative for acid fast bacilli on four examinations, and when cultured it exhibited a predominance of Streptococcus viridans, hemolytic streptococci and some micrococci. A sputum specimen obtained at the time of bronchoscopy was cultured and Neisseria catarrhalis and Streptococcus viridans were recovered.

Roentgenograms.—The roentgenographic changes are illustrated in the sketches in figure 1. A chest roentgenogram taken on March 27, 1945 showed an area of pneumonitis in the right upper lobe within which there was an area of rarefaction 2 cm. across with a fluid level. A subsequent roentgenographic examination of the chest on April 24 revealed minimal residual pneumonitis in the right first interspace in the area where the cavity was originally seen, and a roentgenogram taken on June 5 was interpreted as showing "generalized increase in bronchovascular markings but no evidence of active lung pathologic change." The last roentgenogram, taken on August 2, revealed "no cavity in the right upper lobe."

Hospital Course.—On the first hospital day he was given sulfadiazine by mouth. The initial dose was 2 Gm. and subsequent doses were 1 Gm. every four hours. Postural drainage was initiated on the second hospital day. On the fourth hospital day sulfadiazine was discontinued and penicillin 50,000 units every three hours was given by the intramuscular route and continued at that dose for three days; then the size of each dose was decreased to 15,000 units every three hours for eleven days. Each individual dose was then raised to 25,000 units and given intramuscularly every three hours for the next fifteen days, and 15,000 units every three hours was given intramuscularly until the time of discharge from the hospital. The total amount of penicillin which he received during this thirty-six day period was 6,300,000 units. The patient's admission weight was 145 pounds (66 Kg.) and increased progressively until the time of discharge, when his weight was 164 pounds (74 Kg.). The temperature, which never rose above 101 F., returned to normal on the fourth hospital day and has remained normal. The amount of sputum on the day following admission was 318 Gm. and decreased progressively thereafter, being 150 Gm. on the sixth hospital day, 100 Gm. on the twelfth hospital day and 10 Gm. on the day he went home. This man is employed at the hospital as a barber, has completely recovered and is working full time.

From the Department of Medicine of Wayne University College of Medicine, Detroit, and the Wayne County General Hospital, Eloise, Mich.

Summary of Reported Cases of Lung Abscess Treated with Penicillin

Reference	Diagnosis	Age and Sex	Duration of Disease, Days	Penicillin Dosage, Total Units	Length of Treatment, Days	Comment
Keefer, C. S.; Blake, F. G.; Marshall, E. K., Jr.; Lockwood, J. S., and Wood, W. B., Jr.: J.A.M.A. **122**:1217 (Aug. 28) 1943	Lung abscess		No data reported			Three cases; no detailed information; 2 showed recovery or improvement; 1 died
Lyons, C., ibid. **123**:1007 (Dec. 18) 1943	Lung abscess		No data reported			Four cases; no detailed information; penicillin was without effect on 2 patients with "putrid" lung abscess; 2 pyogenic streptococcus lung abscesses were healed
Dawson, M. H., and Hobby, G. L., ibid. **124**:612 (March 4) 1944	Carbuncle, lung abscess, pleural effusion, staphylococcus with bacteremia	33	..	1,800,000	9	A remarkable recovery in a desperately ill patient; carbuncle drained surgically ***
	Multiple lung abscesses, staphylococcus with bacteremia	2½ mo.	..	692,000	32	Infant with cystic fibrosis of pancreas; infection later recurred and patient succumbed *
	Lung abscess, mixed infection	8 mo.	..	240,000	15	Infant with cystic fibrosis of pancreas; blood culture positive for both hemolytic streptococcus and Staphylococcus aureus; remarkable response, but infection recurred and infant died *
	Lung abscess, with metastatic brain abscess, mixed infection	46	..	4,050,000	50	Lung abscess cleared; patient ultimately succumbed to brain abscess *
Bloomfield, A. L.; Kirby, W. M., and Armstrong, C. D., ibid. **126**:685 (Nov. 11) 1944	Lung abscess following aspiration of potato chip, mixed infection	..	28	900,000	3	Desperately ill patient with progressive gangrene of lung; contents of abscess obtained at autopsy showed no growth on culture *
Herrell, W. E., and Kennedy, R. C. G.: J. Pediat. **25**:505 (Dec.) 1944	Lung abscess, mixed infection	..	..	400,000 960,000	10 24	Two cases: no detailed information; recovery occurred in both cases *** ***
Roberts, J. E. H.; Tubbs, O. S., and Bates, M.: Lancet **1**:39 (Jan. 13) 1945	Lung and brain abscess, nonhemolytic streptococcus	..	..	1,680,000	14	Patient died; nonhemolytic streptococci found in frontal lobe abscess at autopsy *
	Lung abscess, mixed infection	37 ♀	14	1,470,000	19	Complete recovery ***
	Lung abscess, postoperative hemolytic streptococci	51 ♂	..	1,380,000	14	Progressive decrease in size of 2.5 cm. cavity during 2 month period of x-ray observation **
	Lung abscess, mixed infection	31 ♂	35	960,000	12	After penicillin was stopped fever continued for 2 weeks; then patient made a complete recovery ***
Harford, C. G.; Martin, S. P.; Hagman, P. O., and Wood, W. B., Jr.: J. A. M. A. **124**:612 (March 4) 1944	Lung abscess, empyema, brain abscess, anaerobic streptococcus	52 ♂	92	3,495,000	18	Patient died; lesion chronic; well localized; comatose on entry *
	Lung abscess, postoperative (? hemolytic staphylococcus)	43 ♀	20	3,032,000	19	Prompt clearing of pulmonary infiltration ***
Craig, W. M.; Thompson, G. J.; Hutter, A. M.; Barksdale, E. E., and Pfeiffer, C. C.: U. S. Nav. M. Bull. **44**:453 (March) 1945	.....		No data reported			Four cases: penicillin administered for 2-3 weeks; 2 cases responded to intramuscular penicillin, 2 required surgical drainage
Barach, A. L.; Silberstein, F. H.; Oppenheimer, E. T.; Hunter, T., and Soroka, M.: Ann. Int. Med. **22**:485 (April) 1945	Lung abscess, rheumatic heart disease, pulmonary infarction	35 ♀	49	1,600,000	8	Treated one month with intramuscular penicillin, 160,000 units daily; no improvement until penicillin "aerosol" was given one week; ultimate recovery ***
	Bronchiectasis, lung abscess, pulmonary fibrosis	43 ♂	15 yrs.	.....	7	Only little improvement; increase in vital capacity; no change in roentgenograms **
	Bronchiectasis, lung abscess	24 ♂	16 yrs.	6,000,000	30	No clinical improvement; lobectomy was subsequently performed, with recovery **
	Bronchiectasis, lung abscess	29 ♀	23 yrs.	5,180,000	35	Not significantly benefited *
	Lung abscess, acute	65 ♂	35	2,500,000	10	Penicillin by inhalation produced clinical improvement; there was no change by x-ray; surgical drainage, with recovery **
Freyhan, F. A.: Delaware M. J. **16**:177 (Nov.) 1944	Lung abscess	60 ♀	30	1,000,000	10	Response was favorable; one month later x-ray examination revealed complete clearing of the lung field ***
Snook, R. R.: J. Kansas M. Soc. **46**:40 (Feb.) 1945	Lung abscess, acute 2 weeks after tonsillectomy	17 ♀	2	600,000	6	Complete recovery ***

* No improvement or death. ** Satisfactory improvement. *** Complete recovery.

This man had an acute pulmonary abscess for which he received 6,300,000 units of penicillin by the intramuscular route, beginning relatively early following the onset of his pulmonary symptoms. He never appeared to be particularly ill, and the lesion, which was diagnosed early, showed progressive diminution in size and

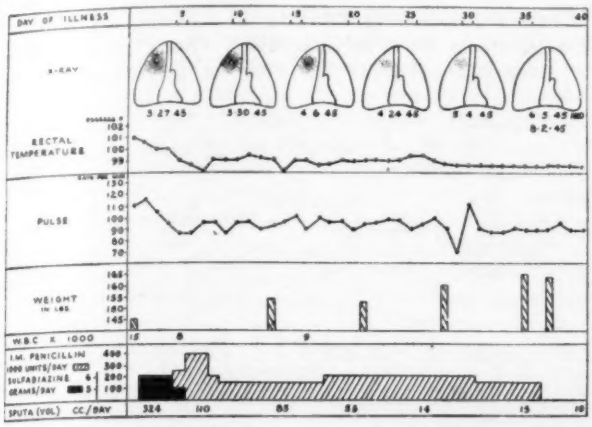

Fig. 1 (case 1).—Clinical course in a patient with an acute lung abscess who was treated with penicillin. Note that sketches of the roentgenograms do not correspond to the day of the illness.

was absent by the end of the fourth week of treatment. It has now been three months since his discharge from the hospital, and there has been no evidence of recurrence of the abscess. It is impossible to say that this lesion would not have regressed spontaneously; however, considering the size of the lesion and the rapidity with which it developed, it seems to us unlikely that complete resolution would have taken place without the use of some chemotherapeutic agent. We believe that penicillin decidedly shortened the clinical course of this patient's illness.

CASE 2.—*History.*—J. H., a white man aged 45, a mentally deteriorated paretic inmate of the Psychiatric Division of the Eloise Hospital, was admitted to the General Hospital Division of the Wayne County General Hospital on Aug. 16, 1944, at which time no reliable history was obtainable. He had lost con-

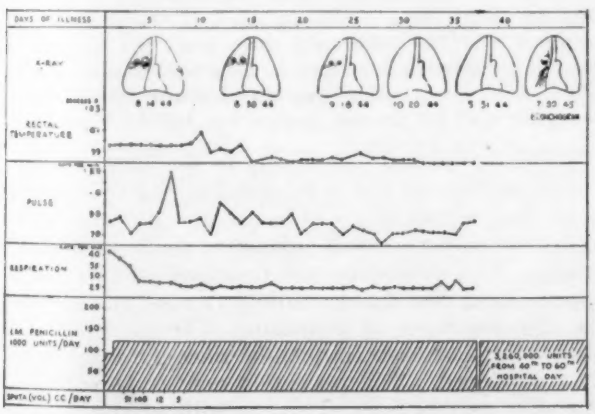

Fig. 2 (case 2).—Clinical course following penicillin therapy in a patient with acute lung abscesses. Note that the illustrations of the roentgenograms and the bronchogram do not correspond to the day of the illness.

siderable weight during the two weeks prior to admission, his temperature had been elevated, and it was noticed that his breath was foul.

Physical Examination.—At the time of admission the temperature was 99.6 F., the pulse rate 88 per minute and the respiratory rate 38 per minute. He was poorly developed and appeared chronically ill. He coughed frequently and held his hand over his right chest. The sputum which he coughed up was yellow and had a very foul odor. There was increased tactile fremitus, with dulness over the entire right hemithorax and coarse rales over the right middle lobe.

Laboratory Data.—The blood count on the first hospital day was hemoglobin 11 Gm., red blood cells 3,670,000 per cubic millimeter and white blood cells 23,300 per cubic millimeter. Sputum studies revealed Streptococcus viridans, Neisseria catarrhalis and Staphylococcus aureus, but no acid fast bacilli were found.

Roentgenograms (fig. 2).—On August 14 roentgenograms of the chest revealed the presence of two cavities in the right midlung field, each of which had a fluid level; the largest measured 4.5 cm. across. There was a small area of pneumonitis about each of these cavities. Lateral view of the chest showed the abscesses to be in the posterior portion of the chest in the apex of the right lower lobe. Another roentgenographic examination on October 20 revealed evidence of

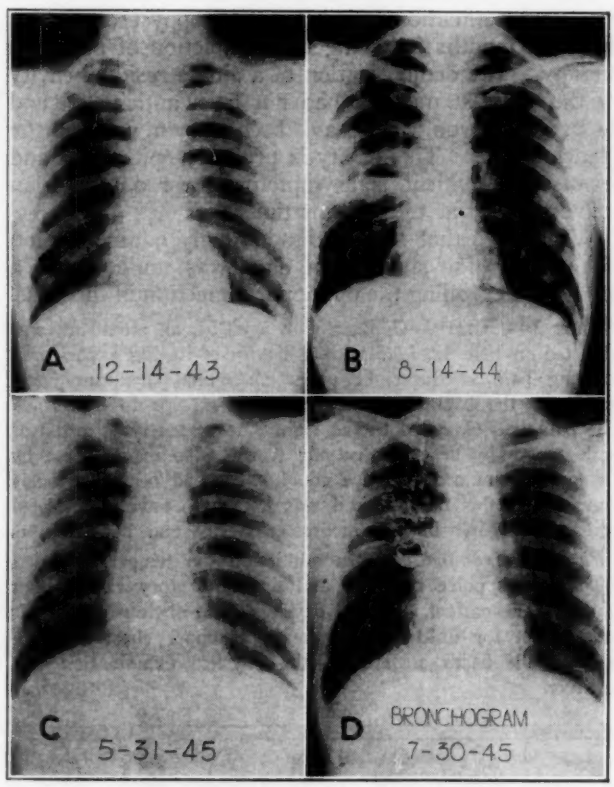

Fig. 3 (case 2).—Changes that occurred after penicillin therapy in a patient aged 45 with acute lung abscesses: *A*, appearance at time of admission to the Psychiatric Hospital. *B*, two abscesses in superior division of the right lower lobe before penicillin therapy. *C*, no evidence of abscesses nine months after penicillin therapy. *D*, bronchogram showing residual cavity, which was not evident on routine roentgenograms.

pleural thickening. The bases of both lungs appeared to be emphysematous, but no cavity could be seen. On May 31, 1945 roentgenograms of the chest were again taken which showed increased lung markings, no areas of infiltration or consolidation and no evidence of lung abscesses. Although the patient had been without evidence of lung disease for nine months, follow-up roentgenographic examinations including bronchograms were done on July 30, 1945. In the upper posterior part of the right lower lobe a smooth walled 3 cm. cavity was clearly demonstrated (fig. 3). There was no evidence of pneumonitis about the cavity. This cavity was situated in the position occupied by the largest of the two lung abscesses. Its presence had not been suspected in the roentgenograms taken nine and four months before.

Hospital Course.—Intramuscular penicillin therapy was begun on the first hospital day. He received 15,000 units every three

hours throughout the thirty-seven days of hospitalization in the General Hospital. During the month following his transfer back to the Psychiatric Division he continued to receive penicillin by the same route of administration and the same total daily dose. Therefore this patient received a total of about 7,700,000 units of penicillin in a period of sixty-seven days. The volume of the sputum decreased progressively; it was 51 Gm. on the third hospital day, 12 Gm. on the sixth hospital day and 5 Gm. on the eighth hospital day. The temperature and pulse remained within normal limits during the entire course of the illness. However, the respiratory rate was elevated during the first three days after admission, then it returned to and remained normal.

When all physical signs of pulmonary disease disappeared and no cavities were reported on roentgenograms taken one and nine months following the use of penicillin, we considered that the multiple abscesses had been obliterated and healed by fibrosis. To obtain objective evidence regarding this point a roentgenographic examination using iodized poppyseed oil was done ten months following the completion of penicillin therapy. The demonstration of a single residual cavity by the contrast medium had not been anticipated and its presence would not have been shown without the bronchograms. This cavity is probably epithelized and because the patient is asymptomatic we do not plan active therapy at the present time.

We believe that the continuous daily administration of penicillin for sixty-seven days was undoubtedly a factor in controlling the pulmonary infection in this case.

Case 3.—*History.*—C. B., a man aged 57, an attendant, was admitted on Feb. 12, 1945 with a history of having experienced stabbing pain in the right upper abdominal quadrant penetrating to the back for about three days prior to admission. The pain had extended to the right side of the chest and was made worse by deep inspiration; it was also made worse by the presence of a productive cough. He had been previously examined at this hospital and was known to have had a posterior myocardial infarct, moderate obesity and hypertension.

Physical Examination.—On admission the temperature was 100.6 F., the pulse rate 100 and the respiratory rate 44 per minute. The patient was well developed but obviously dyspneic and, except for dulness over the right upper chest and fine rales at the bases posteriorly, the physical examination was negative.

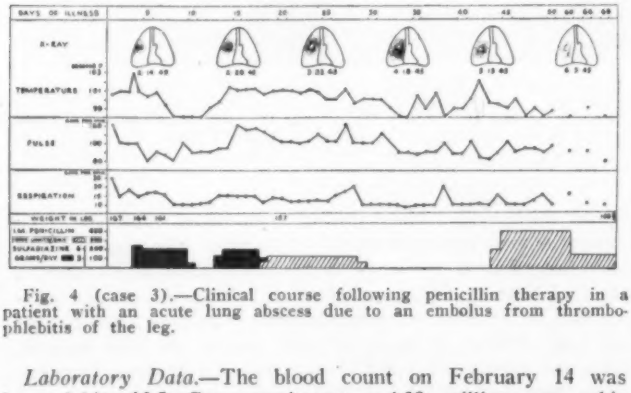

Fig. 4 (case 3).—Clinical course following penicillin therapy in a patient with an acute lung abscess due to an embolus from thrombophlebitis of the leg.

Laboratory Data.—The blood count on February 14 was hemoglobin 13.5 Gm., erythrocytes 4.32 million per cubic millimeter and leukocytes 14,250 per cubic millimeter. On February 13 the sputum showed many type XVII pneumococci. No acid fast bacilli were found on five examinations.

Roentgenograms (fig. 4).—On February 14 roentgenograms of the chest showed peribronchial infiltration in both bases and was interpreted as bronchopneumonia. On March 22 there was an area of pneumonitis in the right midlung field, within which there was an area of rarefaction and lateral view of the chest showed the cavity at the apex of the right lower lobe with a fluid level. On April 18 roentgenograms showed decrease in both the size of the cavity and the pneumonitis. On June 3 roentgenograms of the chest showed the presence of the cavity with minimal reactions about the cavity. Roentgenographic examinations of the chest, including bronchograms taken on July 27, revealed no evidence of a residual cavity in the apex of the right lower lobe.

Hospital Course.—On February 15 sulfadiazine 4 Gm. was given orally as an initial dose and 1 Gm. every four hours for seven days. During this time the patient continued to

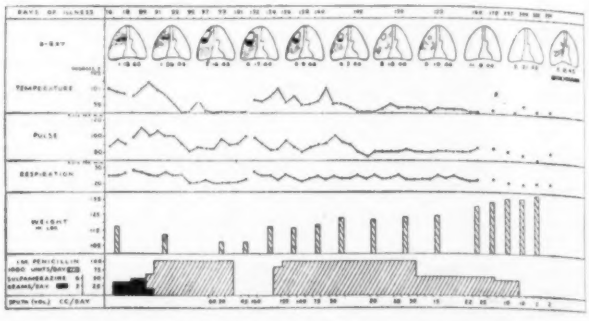

Fig. 5 (case 4).—Clinical course of a patient with multiple chronic lung abscesses treated with penicillin.

experience chest pain on the right side and coughed up old blood. On February 24 sulfadiazine was restarted in the aforementioned dosages. Physical examination at that time revealed dulness with crackling rales at the bases. The sulfadiazine was continued for five days. The low-grade fever, chest pain and dark foul sputum persisted. On March 2 the patient experienced additional pain in the right side of the chest associated with pain in the right calf and venous engorgement. The patient was thought to have had a pulmonary infarct and thrombophlebitis. Penicillin in doses of 15,000 units given every three hours intramuscularly was started on March 2 and continued for eleven days. Thus a total of 1,575,000 units of penicillin was given in this initial course. The right femoral vein was ligated on March 7 and at the time of operation a firm clot could be felt within the femoral vein and a 14 inch clot was aspirated from the vein. On March 22 there was roentgenographic evidence of a lung abscess. Penicillin was again started on March 29 in doses of 50,000 units every three hours by the intramuscular route and continued at this high level for fifteen days. Then on April 15 the penicillin was decreased to 15,000 units every three hours and kept at this dose until discontinued on June 9. The total amount of penicillin administered during the second course was 12,600,000 units; the total for the two courses was 14,175,000 units.

We consider that the results in this case, an acute pulmonary abscess due to an embolus, can be attributed to the long continued use of penicillin. We were unable to demonstrate a residual pulmonary cavity by bronchograms. This procedure was indicated in view of our experience in case 2 and was done two months following the discontinuance of penicillin. The total period of observation has been six months since the lung abscess first developed. The patient is now employed as an attendant in this hospital and is without any evidence of pulmonary disease.

Case 4.—*History.*—F. K., a white man aged 57, a laborer, was transferred to the Wayne County General Hospital from the Henry Ford Hospital, Detroit, on Jan. 11, 1944. During the first week in December 1943 he had a severe cold with fever, cough, chest pain and night sweats and had lost 20 pounds (9 Kg.). A report from the Henry Ford Hospital [1] stated that when he was first seen there was dulness over the right upper lobe pos-

1. Personal communication from Dr. F. Janney Smith, Detroit.

teriorly with prolonged expiratory breath sounds. Their laboratory studies showed hemoglobin 13.7 Gm., red blood cells 4,210,000 per cubic millimeter, white blood cells 17,500 per cubic millimeter and in the sputum type IV pneumococci but no acid fast bacilli. In that hospital the patient had a septic type of temperature which was not influenced by accepted therapeutic doses of sulfadiazine. Roentgenograms taken there revealed multiple abscesses of the upper lobe of the right lung. On bronchoscopy pus was seen coming from the right upper lobe bronchus, which was moderately obstructed. A biopsy of the wall of the bronchus showed only inflammatory changes.

Physical Examination.—At the time of admission to the Wayne County General Hospital the patient appeared pale and chronically ill. There was dulness over the right upper lobe, with numerous fine inspiratory rales over the same lobe. His weight was 117 pounds (53 Kg.).

Laboratory Data.—Two days after admission the hemoglobin was 9.5 Gm., red blood cell count 3,400,000 per cubic millimeter and white blood cell count 15,800 per cubic millimeter. Six specimens of sputum were studied for tubercle bacilli by smear and culture with negative results. Bronchoscopy revealed no malignant obstruction, and cultures of secretions from the right upper lobe obtained through the bronchoscope revealed hemolytic and nonhemolytic streptococci and Neisseria catarrhalis.

Roentgenograms.—The course of the disease is well illustrated by the changes in the roentgenograms, which were taken at frequent intervals during the twenty month period of observation. The changes in the serial chest films are reproduced in the series of sketches in the upper part of figure 5. In the first roentgenograms of the lungs, taken January 18, there was a 2 cm. cavity just above the hilus in the right upper lobe. It had a distinct fluid level and was surrounded by an area of consolidation. Eight days later two abscesses were present, which on lateral view were seen to be located in the posterior portion of the chest. The chest film taken on March 16 showed a large abscess in the right upper lobe which apparently had no relationship to the abscesses previously described and the consolidation had extended to involve the right middle lobe area. This cavity showed progressive diminution in size on the films taken at monthly intervals and for the first time was not visualized on the film taken on November 8, which was interpreted as showing only evidence of pleural thickening. The roentgenogram of the chest taken on May 21, 1945 showed some residual thickened pleura but no evidence of lung disease. At the time of the last follow-up examinations on Aug. 13, 1945 this patient had been without roentgenographic evidence of active pulmonary disease for ten months. In view of our experience in case 2, in which a "silent" cavity was demonstrated following the instillation of iodized oil, it was decided to include bronchographic studies on this patient. In the central portion of the right middle and upper portion of the right lower lobes multiple bronchiectatic cavities were shown (fig. 6).

Hospital Course and Therapy (fig. 5).—During the first three months in this hospital the patient's temperature was septic in type, ranging from 99 to 102 F. daily. The pulse and respiratory rates were correspondingly elevated. He experienced chills and profuse diaphoresis and expectorated an average of 120 cc. of foul-smelling mucopurulent sputum each day. His weight, which on the first hospital day was 117 pounds (53 Kg.), decreased to 107 pounds (48.5 Kg.) on the 102d hospital day. Sulfamerazine was started on the 16th hospital day in doses of 4 Gm. daily and continued for seventy-two days without any improvement. From the 89th to the 99th hospital day the patient received 1 million units of penicillin given intramuscularly in doses of 20,000 units every four hours. The temperature decreased abruptly to normal on the second day of penicillin therapy, and the volume of the sputum decreased to an average of only 45 cc. per day. The temperature continued normal during the remainder of the time the patient was receiving the first course of penicillin, but it again became septic in type four days after the drug was stopped. Thirty-four days later, on the 134th hospital day, penicillin was again started, the same route and dose schedule being used; on the 153d hospital day the dose was decreased to 10,000 units and given intramuscularly every three hours, and seventeen days later it was further decreased to 5,000 units intramuscularly at three hour intervals until the drug was discontinued on July 25, 1944, which was the 299th hospital day. This patient received a total of 6,360,000 units of penicillin given intramuscularly during a period of seven and one-half months. The volume of the sputum again decreased progressively during the second course of penicillin, being 150 cc. on the 134th hospital day when this series was started, 45 cc. on the 140th hospital day and 15 cc. on the 170th hospital day, and at the time of discharge he was expectorating an average of only 2 cc. each day. The patient's weight gradually increased from 107 pounds (48.5 Kg.) at the time the second course of penicillin was given and reached 116 pounds (52.6 Kg.) on the 134th hospital day, 118 pounds (53.5 Kg.) on the 140th hospital day and 133 pounds (60 Kg.) on the 170th hospital day. At the time of release he

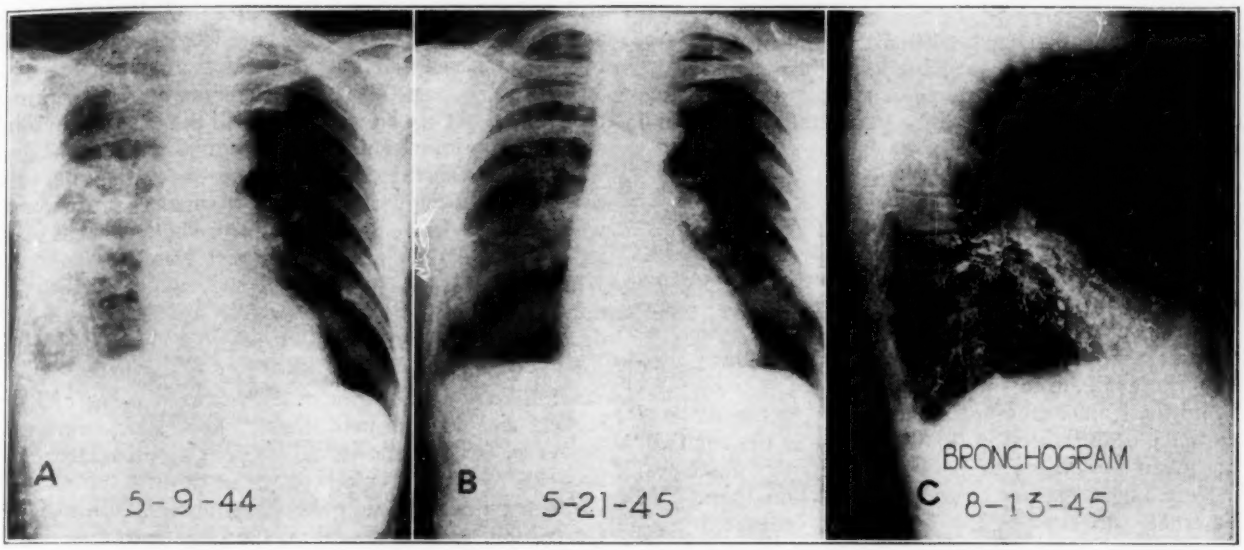

Fig. 6 (case 4).—Patient aged 57 with multiple chronic lung abscesses: *A*, large abscesses in the right upper lobe. *B*, appearance ten months after penicillin therapy, showing residual thickened pleura but no evidence of lung disease. *C*, bronchogram taken thirteen months after penicillin therapy, showing residual bronchiectatic cavities in the right lung.

weighed 137 pounds (62 Kg.), which was his usual weight. This patient has been followed in the outpatient department of this hospital and on Nov. 8, 1944 he was asymptomatic and weighed 140 pounds (63.5 Kg.). He was last examined on Aug. 13, 1945, at which time he was still entirely free from symptoms and was working seven days each week at hard labor in a defense factory. His weight at that time was 140 pounds.

This patient had chronic multiple lung abscesses for which he received sulfadiazine and sulfamerazine in the usual therapeutic doses during a thirteen week period without improvement. During the next seven and one-half months he received more than 6 million units of penicillin given by the intramuscular route. With this therapy, which was almost continuous, he showed a gradual progressive clinical improvement. To date he has been observed for a total of twenty months and is now without symptoms and is employed full time at his previous occupation as a factory worker.

We believe that the long-continued use of penicillin in this case controlled the pulmonary infection and thus permitted the gradual healing of the pulmonary abscesses. We believe that without therapy in this case death was very likely and that penicillin should be considered as having been instrumental in the recovery. We attribute the satisfactory response to the long-continued use of penicillin, which controlled the pulmonary infection and thus permitted the gradual healing of the multiple abscesses.

COMMENT

It is obvious that the collective information on the subject of penicillin therapy of lung abscesses is too meager at present to determine the exact place of this new antibiotic in the treatment of these cases. These 4 cases are reported solely to add to the collective statistics that will eventually enable the medical profession to evaluate this new drug.

The total amount of penicillin given to the patients who have been treated in this hospital was greater than that given by others to patients with lung abscesses. The seemingly greater efficacy of penicillin therapy in this small series when the results are compared with the collective series (shown in the table) may be due entirely to chance. Evidently the total dosage is not a significant factor, for the largest total doses previously reported were given to patients who were not cured (fourth case of Dawson and Hobby in the table and third and fourth cases of Barach and his associates in the table).

The duration of continuous intramuscular penicillin therapy employed in the cases which form the basis for this report has been longer than that used in any of the previously reported cases. Patient 1, with an acute lung abscess, was given continuous treatment for thirty-seven days. Patient 2, with acute lung abscesses, was treated for thirty-nine days. Patient 3, who had a pulmonary abscess following an embolus to the lung, was treated continuously for eighty-one days. Patient 4 received daily injections of penicillin for one hundred and sixty-six days without interruption. It would appear that this long-continued chemotherapy is required to control the surrounding infection adequately. Much more detailed clinical work is necessary before the final word can be said about the dosage of penicillin in lung abscesses.

We wish to stress the advisability of obtaining bronchograms in the follow-up study of all patients with lung abscesses treated with penicillin. The importance of this is clearly shown in our experience in cases 2 and 4. No cavities were reported on the routine roentgenograms of the chest in case 2 taken nine months after all evidence of pulmonary disease had subsided, but the presence of a residual cavity was easily demonstrated following the instillation of iodized oil. In case 4 the existence of bronchiectasis, not suspected on routine roentgenograms, was proved by the same method. It is therefore evident that, before one is justified in concluding that a patient with pulmonary abscesses treated with penicillin is cured, a thorough investigation with some radiopaque medium is indicated.

It is noteworthy that these patients tolerated such massive doses of penicillin without any significant untoward reactions. The patients with acute lung abscesses (1, 2 and 3) received 6,380,000, 7,700,000 and 14,175,000 units of penicillin respectively. The patient who had multiple chronic lung abscesses was given a total of 6,360,000 units of penicillin over seven and one-half months of hospitalization.

Our experience, though limited, has been similar to that reported by others. It seems probable that many acute lung abscesses may be cured by this means. In the chronic cases of lung abscesses in which there is adequate drainage through a bronchus, it would appear that recovery may be expected with the use of penicillin alone if continued sufficiently long. In those cases of chronic lung abscesses which do not communicate with a bronchus to allow free drainage, surgical intervention will probably be required. It is predicted that if lung abscesses are recognized early and treated vigorously with penicillin, it can be reasonably expected that the mortality and morbidity from this disease will further decrease.

SUMMARY

Of a total of 31 previously reported cases of lung abscess treated with penicillin, 13 have shown complete recovery, 8 have shown satisfactory improvement and in 10 there was either no change or death occurred.

Of 4 patients with pulmonary abscesses whom we treated with penicillin administered by the intramuscular route, 3 had acute pulmonary suppuration with cavity formation and the fourth had chronic lung abscesses. All of these patients had mixed infections. The period of follow-up observation of the patient with chronic lung abscesses was twenty months; the patients with the acute abscesses have been studied for five, six and twelve months. There has been complete recovery in 2 of the acute cases. In case 2 there was complete healing of one abscess and resolution of the surrounding pneumonitis, but a residual thin walled cavity still persists. The presence of this cavity was not evident on the routine roentgenograms but was easily demonstrated on the bronchograms. Patient 4, the one with multiple chronic lung abscesses, has shown complete clearing of the original abscess cavities but has many saccular bronchiectatic cavities. The area involved with the residual bronchiectasis is the right middle and lower lobes and is not the site of the previous cavities.

In our experience the long-continued use of penicillin has resulted in the control of the surrounding pneumonitis in all 4 cases and has permitted the healing of the abscess cavities in 3 of them. We are of the opinion that if lung abscesses are recognized early and vigorously treated by long-continued penicillin administration there will be an appreciable reduction in the morbidity and mortality from this disease.

PERIPHERAL NERVE INJURIES IN EUROPEAN THEATER OF OPERATIONS

MANAGEMENT, WITH SPECIAL REFERENCE TO EARLY NERVE SURGERY

COLONEL R. GLEN SPURLING

Senior Consultant in Neurosurgery, European Theater of Operations
MEDICAL CORPS, ARMY OF THE UNITED STATES

The improper management of peripheral nerve injuries, as is well known, can leave the patient with a useless, anesthetic limb, amputation of which is frequently the lesser evil. The fact that approximately 15 per cent of all battle injuries of the extremities in the European Theater of Operations were complicated by nerve damage therefore made the planning of an efficient program for their management a matter of extreme importance. Like all programs planned in wartime, the regimen finally devised was based on fundamental surgical principles modified, as circumstances required, to bring them into accord with the exigencies of the military situation.

The neurosurgical principles on which the management of peripheral nerve injuries in the European Theater of Operations was based may be briefly stated as follows: 1. In view of the irreparable degenerative changes which occur in the distal segment and the end plates of a severed nerve with the passage of time, early surgical repair is essential for the best results. 2. Immediate primary suture of a severed nerve is desirable theoretically but in practice is not a good plan, if only because battle injuries are almost invariably associated with contusion of nerve tissue. 3. Experimental and histopathologic evidence [1] indicates that the optimum time for end to end suture of a severed nerve is between the third and the ninth week after injury, and that repair between the twenty-first and the twenty-eighth day is probably productive of the best end results and can be carried out with the least technical difficulties.

In military practice the selection and disposition of cases for operation and other phases of treatment are sometimes necessarily modified by factors which may not be related to the professional welfare of the patient. The chief of these difficulties has to do with transportation. In Circular Letter No. 81, dated June 10, 1944, the Office of the Chief Surgeon, European Theater of Operations, issued instructions to all military installations in this theater that neurosurgical casualties [2] should be transferred to the United Kingdom, for admission to some one of the twelve neurosurgical centers which had been established there, as promptly as transportation facilities permitted. Priorities for evacuation in this category went first to spinal injuries, second to penetrating injuries of the brain, third to closed cranial injuries and last to peripheral nerve injuries.

From the standpoint of risk to life this order of priority was obviously justified. The practical result, however, was that patients with peripheral nerve injuries, because of their low priority of evacuation, seldom reached the neurosurgical centers in the United Kingdom until two to three weeks after wounding. In the interim, the injuries had been debrided, in conformity with the regulations established for the management of soft tissue wounds, and delayed wound closure had usually been done at some one of the installations at which the patients had been temporarily delayed in transit.

Under these circumstances it would have been desirable to perform most of the definitive peripheral nerve surgery in the zone of the interior (the United States). For one thing, it is imperative in an active theater of operations to keep nonemergency surgery at a minimum, leaving hospital beds free for more urgent requirements. For another, most patients with peripheral nerve injuries are never again fit for combat duty and may be promptly written off as military effectives. On the other hand, experience soon showed that for military reasons evacuation to the zone of the interior was often so long delayed that the optimum period for nerve repair would have passed by the time the patients had reached neurosurgical centers in the United States. In the absence of complications, however—and they are not the rule in properly managed cases—the usual neurosurgical patient could safely be put aboard a hospital carrier within a few days after operation.

The solution of the problem, then, was to correlate the available transportation and the optimum time for neurosurgery in each case, which was done as follows: 1. Disposition board proceedings were completed as soon as possible after the patient was admitted to the hospital from the zone of combat. 2. Patients with serious wound infections or with extensive soft tissue injuries requiring plastic repair were evacuated to the United States as promptly as possible, without being submitted to neurosurgery in the United Kingdom. 3. If transportation was available, all other neurosurgical casualties were prepared for evacuation to the zone of the interior. 4. If it was not, or if for any other reason, including complicating injuries, evacuation was undesirable, the waiting period was utilized for the repair of nerve injuries and the patients were evacuated to the United States as soon after operation as their condition permitted and facilities were available.

One of the serious difficulties in the management of peripheral nerve injuries in the European Theater of Operations had to do with the totally inadequate number of trained neurosurgeons available to handle the casualty load. The deficit was met in two ways, by the use of a number of general surgeons in the theater who had had some training in traumatic surgery in the zone of the interior and by the use of general surgeons of sound training who were rapidly instructed in fundamental neurosurgical principles. These two supplemental groups of surgeons were assigned to special neurosurgical centers, in which they worked under chiefs of service who were formally trained in neurosurgery and who usually had had considerable experience in their specialty in civilian practice. The centers were under the continuous supervision of local and regional consultants in neurosurgery, who in turn maintained intimate contact with the Professional Services Division of the Chief Surgeon's Office, European Theater of Operations. The entire program could thus be unified by standardization of diagnostic and therapeutic methods. It is not too much to say that it was

1. Young, John Z.: The Process of Regeneration of Nerve and Muscle Following Immediate and Delayed Suture, Tr. Am. Neurol. A., 1943, pp. 41-42. Brenner, Charles: Injuries to Peripheral Nerves: A Review of Recent Literature, War Med. **5**: 21-35 (Jan.) 1944. Young, J. Z.: Effect of Delay on Success of Nerve Suture, Proc. Roy. Soc. Med. **37**: 551-552 (Aug.) 1944. Lyons, William, and Woodhall, Barnes: Atlas of Peripheral Nerve Pathology, to be published.

2. Neurosurgical injuries had previously been defined as including all surgical lesions of the central, peripheral and sympathetic nervous systems, the clarification being necessary because the medical departments of some of the other Allied armies included only craniocerebral injuries in this category.

the resourcefulness and energy of the young general surgeons who were suddenly called on to become proficient in neurosurgery which made possible the handling of so many peripheral nerve injuries within the optimum period for repair.

PROGRAM OF MANAGEMENT

The Manual of Therapy for the European Theater of Operations issued May 5, 1944, outlined the following plan of management for peripheral nerve injuries, which, it is interesting to note, required no substantial alterations in the year of heavy fighting which followed:

1. Injury to one or more of the major nerve trunks should be regarded as a possibility in every wound of the extremities. Simple tests for motor and sensory function should be used to determine which nerve (or nerves) is involved.

2. The existence of a nerve injury does not warrant any departure from the regulation management of soft tissue wounds, that is, initial débridement and delayed wound closure.

3. If when débridement is done the severed nerve ends are visualized, they should be approximated whenever possible. If the gap does not permit approximation, the ends should be snugly anchored to surrounding soft tissue. Fine stainless steel or tantalum wire should be used for suture material, both being useful for later roentgenologic demonstration of the location of the injury and the extent of the defect. The purpose of the initial suture or temporary anchoring of the nerve ends is to prevent their retraction, which greatly complicates later end to end suture. Elaborate primary nerve suture should not be attempted.

4. The soft tissue wound should, as usual, be left open, to be closed at an appropriate time in an installation farther to the rear. The muscles or fascia should be approximated loosely over the exposed nerve trunk. A pack should never be placed over an exposed major nerve trunk.

5. Splinting is usually a preliminary requirement for transportation. About half of all nerve injuries are associated with injuries to one or more of the long bones, but even in the absence of bone injuries the extremity should be immobilized in the most favorable position to prevent deformity. This can usually be achieved with bandages, blankets or rolls of clothing; casts and elaborate splints are seldom required for evacuation. Protection of an extremity deprived of sensation is, however, essential.

6. An extremely important phase of preevacuation management is the careful recording of the condition of the injured nerves at the first observation and a statement as to exactly what was done at débridement. The notes can be written either on the emergency medical tag or on the cast. Lack of these data may delay subsequent surgery or result in unnecessary nerve explorations.

Every surgeon who participated in the peripheral nerve injury program was carefully instructed in the generally accepted technical principles of nerve repair. In particular, it was stressed: 1. That the nerve ends must be accurately trimmed until essentially normal tubules were visible. 2. That the divided ends must be approximated with the greatest care by interrupted epineural sutures. 3. That the suture line must be perfectly free from tension. 4. That hemostasis must be rigid. The use of a through and through suture (sling stitch) was optional.

The suture material recommended for use throughout the European Theater of Operations was fine tantalum wire swedged on an atraumatic needle. A few surgeons, particularly at the beginning of the program, preferred fine silk, but wire was generally used, partly, as already noted, because of its usefulness in later roentgenologic demonstrations of the injury and partly because it is practically inert in human tissues.

A small cuff about the suture line was used in almost all of the cases handled in the European Theater of Operations. Usually it was of rolled tantalum foil, but in one installation a plasma clot was used according to the technic of Tarlov,[3] the variation being permitted for the purpose of obtaining comparative data as to the value of the two methods.

Casts for the correction of deformities due to nerve injuries were prohibited except during the postoperative immobilization period, removable splints being preferred. Extension of the flexed joint was usually begun at the end of the second week after operation and was completed by the end of the fifth week. It was believed that this policy was safe because of the comparative freedom from extensive fibrosis observed in patients treated by early nerve suture, and the plan also reduced the period of overseas hospitalization and permitted evacuation to the zone of the interior within the time policy of the theater.

PHYSICAL THERAPY

It was repeatedly emphasized, by directives, circular letters, conferences and personal visits, to all officers participating in the peripheral nerve injury program that operation was but a single phase of the treatment of an extremity paralyzed as the result of peripheral nerve injury. Obviously an extremity will be functionally useless, however satisfactory the nerve repair and subsequent regeneration may be, if temporarily denervated muscles are permitted to become irreversibly atrophied or fibrosed or if joints of the wrist, hand, ankle, fingers or toes are "frozen" beyond repair. For the best results in neurosurgery it is therefore essential that physical therapy be employed both before and after operation.

The excellent results obtained by the peripheral nerve injury program in the European Theater of Operations were at least in part due to the expansion of the Physical Therapy Service proportionately with the neurosurgical load. The Chief Surgeon's Office cooperated fully in this respect, by the authorization of additional space and equipment, the assignment of available Army personnel in excess of Table of Organization specifications and, whenever possible, the employment of trained British civilian personnel. As a result, the Physical Therapy Service became one of the most important departments of every neurosurgical center.

Recent experiments and clinical studies[4] have indicated that daily galvanic stimulation of denervated muscles will prevent atrophy and retard fibrosis, and

3. Tarlov, I. M., and Benjamin, Bernard: Autologous Plasma Clot Suture of Nerve, Science **95**: 258 (March 6) 1942.

4. Fischer, Ernst: Effect of Faradic and Galvanic Stimulation on Course of Atrophy in Denervated Skeletal Muscles, Am. J. Physiol. **127**: 605-619 (Nov.) 1939. Gutmann, Ernest, and Guttmann, Ludwig: Effect of Electrotherapy on Denervated Muscles in Rabbits, Lancet **1**: 169-170 (Feb. 7) 1942. Doupe, J., Barnes, R., and Kerr, A. S.: Studies in Denervation: Effect of Electric Stimulation on Circulation and Recovery of Denervated Muscle, J. Neurol. & Psychiat. **6**: 136-140 (July & Oct.) 1943.

this measure was therefore employed as a routine in all cases, beginning with fifteen brisk contractions daily and progressing gradually to thirty contractions. When casts were used for postoperative immobilization, windows were cut over the bellies of the paralyzed muscle groups and galvanic stimulation was begun the day after operation. Other measures included massage, active and passive motion and the use of dry and moist heat as indicated. Particularly careful attention was given to the active and passive motion of small joints. Fixation by splints was kept at a minimum, detailed instruction of the patients in respect to the care of their own joints being considered more important than mechanical methods of fixation.

ANALYSIS OF DATA

Earlier in the war, during the fighting in the Mediterranean, many surgeons had been somewhat hesitant over applying the neurosurgical principles just outlined to battle casualties. Even the most skeptical, however, were apparently convinced of their wisdom and safety by the demonstration during the North African campaign that open granulating soft tissue wounds could be closed within seven to ten days after wounding, with resulting primary healing, so that elective neurosurgical repair could be undertaken within the optimum time period without fear of serious wound infections. The European campaign presented an opportunity to test the program on a large scale.

Essential Data on 6,245 Peripheral Nerve Injuries Observed in the European Theater of Operations

	D Day Aug. 1, 1944	Aug. 1, 1944 Nov. 1, 1944	Nov. 1, 1944 Feb. 1, 1945	Feb. 1, 1945 V-E Day	Totals
Total cases	756	1,871	1,504	2,114	6,245
Surgical cases (percentages are in parentheses)	259 (34.3)	780 (41.7)	754 (50.1)	1,080 (51.1)	2,873 (46.0)
Time lapse after injury (average in days)	28	41	42	42	39
Neurolysis	111 (43.0)	320 (41.0)	385 (51.0)	529 (49.0)	1,345 (46.8)
Neurorrhaphy	148 (57.0)	460 (59.0)	369 (49.0)	551 (51.0)	1,528 (53.2)
Type of suture					
Silk	2 (1.2)	5 (1.0)	3 (0.8)	4 (0.8)	14 (0.9)
Tantalum	146 (98.8)	455 (99.0)	366 (99.2)	547 (99.2)	1,514 (99.1)
Cuff (tantalum)	133 (90.0)	414 (90.0)	322 (90.0)	526 (95.5)	1,405 (92.0)
Wound healing					
Primary	254 (98.0)	764 (98.0)	743 (98.6)	1,064 (98.5)	2,825 (98.3)
Secondary	5 (2.0)	16 (2.0)	11 (1.4)	16 (1.5)	48 (1.7)
Mortality	1 (0.1)	.....	.....	.....	1 (0.03)

A few comments on the data contained in the accompanying table may be useful. Of the 6,245 battle casualties hospitalized with major nerve injuries between D day and V-E day, approximately 46 per cent were operated on overseas. The remainder were evacuated to the zone of the interior for definitive surgery for a number of reasons, the most frequent of which was the inability of the neurosurgical centers abroad to handle larger operative loads within the optimum time limit for surgery. The rise in the volume of patients operated on overseas should be noted. The proportion rose from 34 per cent in the three weeks after D day to 50 per cent in the six months before V-E day, in spite of the increasingly heavy patient load.

In almost 47 per cent of the surgical cases the nerve was found intact, and neurolysis, usually external but occasionally internal, was done. In the remaining cases the operation consisted of end to end suture. This is the most desirable method of treating divided nerves, and the fact that it could be applied in almost every case in the series in which it was indicated is evidence of the soundness of the whole program of early nerve suture. The number of insurmountable gaps in the group of cases under consideration from the European Theater of Operations was less than 1 per cent, whereas in a series of similar cases in which operation was performed in the zone of the interior after the North African campaign it was as high as 10 per cent. The improvement is significant, for elective bone shortening, to facilitate end to end suture, is not a desirable procedure if it can be avoided, while most nerve grafts are clinical failures. I am not aware that a single successful large nerve graft, whether homogenous or autogenous, is on record in the United States Army. Early nerve suture, moreover, was proved to possess at least three major advantages over delayed suture: 1. Mobilization of the proximal and distal nerve segments was much more readily achieved. 2. Fibrosis in the wound, and particularly in the nerve stumps, was greatly minimized. 3. Flexion of contiguous joints was more easily accomplished.

The time lapse between wounding and neurosurgery varied from an average of twenty-eight days in the period immediately after D day to forty-two days in the period of heavy fighting before V-E day. The average of thirty-nine days for the whole period is longer than the most desirable interval, which is twenty-one to twenty-eight days after injury but is still well under the upper limit of ninety days. In some cases associated injuries and in others delayed closure of the wound accounted for the delay in definitive neurosurgery, but the most frequent reason was the difficulties encountered in evacuation from the continent, particularly during the winter months, when air evacuation was often hampered by bad flying conditions.

On the other hand, the time lapse does not seem unduly long when one recollects that in the interval the patients had been removed from the front line and transferred to various installations along the line of evacuation on the continent before they were finally triaged to special neurosurgical centers in the United Kingdom. On the whole, the thirty-nine day average probably represents the shortest practical period within which definitive neurosurgery can be done on large groups of casualties under conditions of active warfare.

That primary wound healing occurred in more than 98 per cent of the cases is itself convincing testimony as to the wisdom of delaying neurosurgery for three to four weeks after débridement of the initial wound. The policy of early nerve stretching, however, was possibly somewhat overemphasized. A recent follow-up[5] of a large number of the cases included in this study has revealed 4 per cent of proved disruptions of the suture line, which perhaps can be partially accounted for by this practice. For the present, therefore, no positive statements can be made as to the

5. Woodhall, Barnes: Unpublished data.

optimum time for joint extension, since so many varied factors entered into the analysis.

In many of the simpler cases in the series operations were performed under local (procaine) infiltration analgesia. Operations on the sciatic nerve were usually performed under spinal analgesia. All brachial plexus injuries and many combined injuries of the upper arm were handled under intratracheal ether anesthesia.

The surgical mortality for the whole series was 0.03 per cent. The single death followed local nerve block, in preparation for exploration of a common peroneal nerve lesion, and was presumably the result of a procaine reaction. The fact that nearly three thousand consecutive major neurosurgical operations could have been performed with but one death is ample testimony to the competence of the anesthetists, particularly when it is remembered that neurosurgical procedures are necessarily complicated and prolonged and that as much as five hours may be required for a single operation.

It might be added that at the beginning of the program early nerve surgery was carried out only in the injuries in which bone complications were not present. Later, combined injuries were brought under the same program.[6] The regimen included débridement and delayed wound closure, balanced skeletal traction for immobilization, chemotherapy, joint operation by the neurosurgeon and orthopedist, and preoperative and postoperative physical therapy.

A Peripheral Nerve Registry has been established in the Professional Consultants Division, Office of the Surgeon General, the purpose of which is to follow up, analyze and assess at regular intervals the results of the program of management outlined in this communication. The preliminary data,[5] which are now being prepared for publication, fully confirm the soundness of the program adopted.

SUMMARY AND CONCLUSIONS

A routine adopted for the management of peripheral nerve injuries in the European Theater of Operations was based on fundamental surgical principles modified, as circumstances required, to bring them into accord with the exigencies of the military situation.

The essential features of the program were (1) débridement and delayed primary closure of the wound, with approximation or anchoring of the severed nerve ends if they were visualized at the first operation; (2) suture of the divided nerve within twenty-one to ninety days after wounding, but preferably between twenty-one and twenty-eight days, when the least technical difficulties and the best end results can be expected; (3) a judicious use of immobilization during transportation and after neurorrhaphy, preferably by removable splints; (4) preoperative and postoperative physical therapy.

The time at which neurorrhaphy was performed was necessarily influenced by the military circumstances and chiefly by the availability of transportation, but even under active combat conditions definitive surgery, either overseas or in the zone of the interior, was practically always performed well within the upper optimum limit.

In the period between D day and V-E day 2,873 peripheral nerve injuries were treated by early nerve surgery in overseas hospitals, with a mortality of 0.03 per cent and with primary wound healing in 98.3 per cent of all cases.

6. Spurling, R. G.: Early Treatment of Combined Bone and Nerve Lesions, Bull. U. S. Army M. Dept. **4**: 444-446 (Oct.) 1945.

Clinical Notes, Suggestions and New Instruments

PANTOPAQUE MENINGITIS DISCLOSED AT OPERATION

I. M. Tarlov, M.D., New York

Although the ideal medium for x-ray visualization of the spinal subarachnoid space has not yet been found, pantopaque appears to be the most satisfactory agent thus far introduced for this purpose. It is more irritating than air or other gases used for myelography, but its use results in much better visualization of the subarachnoid space. It is free from the danger of a radioactive substance such as thorotrast, and it causes less severe reactions than tyrogel.[1] Its advantages over lipiodol are that it flows more freely within the subarachnoid space, fills the arachnoidal prolongations along the nerve roots better, thus being more suitable for the disclosure of herniated intervertebral disks, it is less apt to show false filling defects and it may be more readily removed from the thecal sac. The meningeal response to the injection of pantopaque has been described as "minimal and transient"[2] and the material is being employed on a widespread scale, sometimes indiscriminately, for the diagnosis and localization of herniated intervertebral disks and other spinal lesions. My purpose in this report is to call attention to a rather pronounced inflammatory response which was found among the nerve roots of the cauda equina at operation sixty hours after 3 cc. of pantopaque had been introduced intrathecally.

REPORT OF CASE

A man aged 37, a salesman, was admitted to the hospital for investigation as to the cause of low back pain which radiated down the posterior aspect of one or the other lower limb, more recently the left. The pain occurred in attacks, each lasting several weeks and coming on about twice a year for the past eleven years. Examination revealed tenderness on firm pressure over the fourth lumbar spine, and hyperextension of the lumbar spine produced considerable low back pain, which radiated posteriorly down the left lower extremity. Neurologic examination revealed no abnormality. X-rays of the lumbosacral spine showed localized hypertrophic arthritis of the bodies of the third and fourth lumbar vertebrae. Lumbar puncture was done in the fourth lumbar interspace and there was no evidence of any block on manometric examination. There were no cells in the spinal fluid, but the globulin was reported as "moderately increased" and the total protein was very slightly elevated (54.8 mg. per hundred cubic centimeters). Three cc. of pantopaque was injected intrathecally. About five hours later the patient complained of generalized headache and stiffness of the neck. His temperature rose to 100.8 F. from an initial level of 98.6 F. On the day after injection the temperature rose to 102 F. and on the following day (of operation) the headache subsided but there was still some nuchal rigidity and the temperature fell to 100 F.

The results of the myelographic examination were inconclusive, but in view of the severity and duration of the pain, together with its refractoriness to conservative medical and orthopedic treatment, an interlaminar exploration of the fourth, fifth and the third lumbar interspaces on the left side was done. There was no evidence of a herniated intervertebral disk, and the spine and lamina of the fourth lumbar vertebra were removed. The dura and arachnoid were opened and considerable whitish, soft, stringy exudate, somewhat adherent to arachnoid and nerve roots of the cauda equina, was seen. No other abnormality was found. The pantopaque was removed from the subarachnoid space.

From the Neurosurgical Service of the Flower-Fifth Avenue Hospital.

1. Lefft, H. H., and MacLean, J. A., Jr.: Visualization of the Brain and Spinal Cord with Diiodotyrosine-Gelatin Contrast Medium, Including Observations on the Fate of This Material, Arch. Neurol. & Psychiat. **48**: 343 (Aug.) 1942.

2. Steinhausen, T. B.; Dungan, C. E.; Furst, J. B.; Plate, J. T.; Smith, S. W.; Darling, A. P., and Wolcott, E. C., with Warren, S. L., and Strain, W. H.: Iodinated Organic Compounds as Contrast Media for Radiographic Diagnosis, Radiology **43**: 230 (Sept.) 1944.

Some of the material removed at operation was sent to the laboratory for culture, which failed to show any bacterial growth within forty-eight hours. The remainder of the operative specimen was prepared for microscopic study. Examination showed a meshwork of fibrin strands with numerous embedded polymorphonuclear leukocytes, lymphocytes and plasma cells. There were globular spaces within the tissue, which probably contained pantopaque, lost during the process of histologic preparation. The tissue was clearly inflammatory, as shown in the illustration. Since it resembled, at operation, partially organized pus, the patient was given penicillin therapy, which was discontinued on the fifth postoperative day after he had been free from fever and stiff neck for three days. He made an uneventful recovery from his operation and was discharged from the hospital on the twenty-second postoperative day free from discomfort. The postoperative diagnosis was hypertrophic arthritis of the third and fourth lumbar vertebrae and pantopaque meningitis.

Section of histologic preparation of material removed at operation showing inflammatory reaction caused by pantopaque. Hematoxylin and eosin stain, × 150.

COMMENT

Although the inflammatory tissue was removed from the subarachnoid space underlying the fourth lumbar lamina, there is no doubt, in view of the headache, nuchal rigidity and fever that followed the pantopaque injection, that the inflammatory reaction within the subarachnoid space was fairly widespread. The cultures taken from the operative material showed no growth of bacteria, and there is no satisfactory explanation for the inflammatory change other than that it was caused by the presence of pantopaque within the spinal canal. Peacher and Robertson[3] made a study of the cerebrospinal fluid findings in a series of 60 patients on whom lumbar punctures were done at varying intervals after pantopaque myelography. They recorded spinal fluid cell counts varying from 685 to 2,150 white blood cells per cubic millimeter in 3 cases. The highest spinal fluid cell count in the remaining cases was 70, the majority of the cases showing no increase of cells or of total protein in the fluid.

Steinhausen and his co-workers[2] described a foreign body response to the presence of pantopaque in the subarachnoid space of dogs, and they included in their report the results of examination of a human spinal cord seventeen days after the subarachnoid injection of pantopaque. Few polymorphonuclear leukocytes were observed on the nerve roots. It is quite likely that in the present case reported the inflammatory reaction underwent dissolution, leaving a mere residue of innocuous scar tissue or thickened pia-arachnoid membrane. It is now two months since the operation, and the patient is free from symptoms and abnormal neurologic signs. On the other hand, it is also possible that patients who show a similar type of inflammatory reaction to the drug may develop extensive arachnoiditis such as occurred in a case described by Peacher and Robertson.[3] In their case, "subsequent to the removal of a herniated intervertebral disk, bladder rentention developed." Operation revealed "an extensive arachnoiditis involving the cauda equina." In their patient "the pantopaque had been completely removed after remaining in the subarachnoid space for about ten to fifteen minutes and it is difficult to presume that the arachnoiditis could have represented a reaction." However, since the symptom of the arachnoiditis followed the introduction of the pantopaque, the burden of proof is with those who disclaim a causal relationship, especially in view of the known meningeal reactions that sometimes follow use of the compound.

One must conclude that there is an element of risk associated with the use of pantopaque, namely the danger of provoking meningeal reactions with possible later neurologic symptoms and signs. Such sequelae, as in the case of other substances introduced into the spinal canal, such as anesthetic agents[4] or lipiodol,[5] may come on days or weeks after the injection and progress. Nevertheless there are situations in which myelography is necessary for accurate diagnosis. Until further research discloses a more innocuous contrast medium for myelography, the use of pantopaque seems justified. But its use should be limited strictly to those cases in which the diagnosis cannot be made without the aid of myelography. Furthermore, when pantopaque is used, the injection should be made immediately before fluoroscopy is done rather than than hours or days in advance, as is sometimes practiced. Moreover, since Peacher and Robertson found that the meningeal reactions following the subarachnoid injection of pantopaque are more common after incomplete removal of the material, an attempt should be made to remove it completely from the spinal canal immediately at the close of fluoroscopy. This may be done by aspirating the oil from the subarachnoid space under fluoroscopic control or by the technic recently described by Scott and Furlow.[6] According to their method the "cranial portion of the oil is flowed beneath the tip of the lumbar puncture needle." The stilet is removed from the needle and "the patient is told to take a deep breath and to bear down as if he were attempting to move his bowels. This, of course, is Valsalva's well known experiment of forced expiration against a closed glottis and has the effect of increasing the intraspinal pressure." During this maneuver the column of oil becomes narrowed, moves craniad and "comes bubbling out of the needle." This maneuver "is repeated as often as necessary until all the oil is removed. As a rule this is accomplished within twenty minutes, but occasionally it may take as long as forty minutes. At intervals the patient is examined fluoroscopically and the table is adjusted to keep the diminishing oil column beneath the tip of the needle." The advantage of this method of removing the oil is that the use of suction, which is at times painful and may damage nerve roots, is avoided. However, when this method proves unsuccessful in

3. Peacher, W. S., and Robertson, R. C.: Pantopaque Myelography: Results, Comparison of Contrast Media and Spinal Fluid Reaction, J. Neurosurgery **2**: 220 (May) 1945.

4. Kennedy, Foster; Somberg, H. M., and Goldberg, B. R.: Arachnoiditis and Paralysis Following Spinal Anesthesia, J. A. M. A. **129**: 664 (Nov. 3) 1945.

5. Bucy, P. C., and Speigel, I. J.: An Unusual Complication of the Intraspinal Use of Iodized Oil, J. A. M. A. **122**: 367 (June 5) 1943. Marcovich, A. W.; Walker, A. E., and Jessico, C. M.: The Immediate and Late Effects of the Intrathecal Injection of Iodized Oil, ibid. **116**: 2247 (May 17) 1941. Oldberg, Eric: A Plea for Respect for the Tissues of the Central Nervous System, editorial, Surg., Gynec. & Obst. **70**: 724 (March) 1940.

6. Scott, W. G., and Furlow, L. T.: Myelography with Pantopaque and a New Technique for Its Removal, Radiology **43**: 241 (Sept.) 1944.

removing the oil, one may have to resort to aspiration, which must be carefully done in order to avoid pain and trauma to the cauda equina.

CONCLUSIONS

From the present case reported and from a survey of the literature there is no doubt that an inflammatory and proliferative meningeal reaction may follow the intrathecal introduction of pantopaque. Its use should be restricted therefore to those cases in which critical information is urgently needed for diagnosis and treatment. When employed, it should be injected immediately before fluoroscopy is done and it should be removed immediately after the myelography.

Fifth Avenue at 105th Street.

NEOSTIGMINE METHYLSULFATE AN APPARENT SPECIFIC FOR ARACHNIDISM (BLACK WIDOW SPIDER BITE)

JAMES E. BELL JR., M.D.
Intern, Roper Hospital

AND

JOHN A. BOONE, M.D.
Assistant Professor of Medicine
CHARLESTON, S. C.

Serious results have been observed from the bite of the spider for centuries. Records of these results have been made for over a hundred years, and a popular misconception of their gravity has gained wide acceptance. Carefully observed cases have failed to demonstrate much actual danger to life, but there is no question that the victims undergo severe and prolonged agony.

Latrodectus seems to be the only truly dangerous member of the spider family. Severe epidemics of systemic poisoning were reported in Spain in 1830, 1833 and 1840, and others in France, Italy and Corsica.[1] In the United States, Latrodectus mactans is widely distributed, being especially prevalent in the Southern states, the Ohio valley and the western coastal region. It is commonly known as the Black Widow, Shoe Button, Hourglass, T Dot or Po-Ko-Moo spider. It is shiny and coal black and is marked with an hourglass-shaped spot of red or orange on the ventral side of the globose abdomen. It inhabits dimly lighted, secluded places, such as privies, outlying buildings, lumber piles, stumps and the under side of floors and stones.

Bogen[1] reported 150 cases of spider bite, most of them in males, the majority of whom were bitten on the penis or adjacent parts while using outdoor privies. The syndrome of arachnidism which follows the bite has been graphically described by many. At the instant of the bite there is a sharp, stinging sensation which is acutely painful but transient. Fifteen to forty-five minutes later, acute pain appears in nearby regions and spreads centrifugally. It is most severe in the abdomen and legs but also spreads generally to the back, shoulders and arms. The patient is usually restless and cries out in pain. The thighs are usually flexed on the abdomen, the legs are flexed on the thighs, the arms folded on the chest. The systolic blood pressure is usually elevated. Other more variable symptoms are convulsions, paralyses, urinary retention, shock, delirium, cyanosis, nausea, vomiting, dyspnea, anxiety, insomnia and cold sweats.

The most prominent and almost constant physical finding is a boardlike abdomen which is nontender to palpation. Motion of the extremities is usually limited by spasm of muscle groups. Fever, if present at all, is slight. Acute symptoms last twelve to forty-eight hours, but some cramps usually persist from one to two weeks.

Bogen[1] lists sixty preparations that have been used in treatment. Antitoxins have been developed in the horse and are said to shorten the course if given immediately after the bite. Gilbert and Stewart[2] report almost immediate relief of pain from the intravenous use of calcium gluconate or chloride. Our experience in several cases fails to support the therapeutic effectiveness of calcium salts.

Because cases of spider bite are seen only infrequently in Charleston, S. C., it was felt that the following case, with apparently spectacular relief from neostigmine methylsulfate, should be reported in order that trial by others might more quickly prove its value:

REPORT OF CASE

A Negro youth aged 16, an automobile painter, was admitted to Roper Hospital on Aug. 22, 1945 complaining that he had been bitten on the head of the penis by some insect. At 5 p. m. he sat on the seat of an outdoor privy. A few seconds later he felt a violent, searing pain on the glans penis. He immediately struck himself on the spot and felt some "bug" being brushed off, but he did not see it. The initial pain lasted only two or three minutes.

Approximately twenty minutes later he noted the onset of cramping pains beginning in the groins and extending rapidly to the abdomen. In a matter of minutes the cramps became violent, and agonizing pain was felt over the entire abdomen. He felt his abdomen becoming hard, and relaxation was impossible. One hour after the bite, cramps were present in the back and legs, being especially severe in the legs. There were mild headache and nausea, but no vomiting. Others who shared the privy stated that it contained many spider webs, and that they frequently saw "black and red" spiders.

The patient was well developed and well nourished. Examination one hour after the bite showed the temperature 99.6 F., pulse rate 100, respiratory rate 20 and blood pressure 150 systolic, 106 diastolic. The blood picture was within normal limits; there was no leukocytosis. The urine was normal aside from 2 plus albumin. He was recumbent on the examining table with the thighs flexed on the abdomen, the legs flexed on the thighs, the arms folded on the chest. He was very nervous and tossing about in great pain. Nuchal rigidity was slight and relaxation cogwheel in nature.

The Brudzinski neck sign was negative. The heart was slightly enlarged and rapid with pronounced sinus arrhythmia. A grade 2 blowing apical systolic murmur was heard. Respiration was rapid and almost entirely thoracic. The abdomen was rigid and boardlike but not tender to palpation. The tendon reflexes were active. Sweating was profuse. Muscle spasm was pronounced, particularly in the hamstring group, plantar flexors of the foot and the extensors of the spine. Fine fibrillary twitchings of isolated muscle fibers were present, especially in the pectoral group. An admission diagnosis of arachnidism was made.

When first seen, about one hour after the bite, he was given 10 cc. of 10 per cent calcium gluconate intravenously as recommended by Gilbert and Stewart. There was no abatement of symptoms forty-five minutes later when the injection was repeated. Two hours after the bite the symptoms were more severe, and pronounced periorbital edema was present. He next received an intravenous infusion of 1,000 cc. of 5 per cent glucose in isotonic solution of sodium chloride. Three hours after the bite 5 grains (0.32 Gm.) of pentobarbital sodium was given intramuscularly. Four hours after the bite he received codeine sulfate ½ grain (0.032 Gm.) and acetylsalicylic acid 10 grains (0.6 Gm.) by mouth. Five and one-half hours after the bite he was again given 5 grains of pentobarbital sodium intramuscularly. Six and one-half hours after the bite the patient still showed no sign of having obtained any relief. He remained very restless, cried out in pain and tossed about in bed. The abdomen and other muscle groups remained rigid.

Since good results in the treatment of muscle spasm with neostigmine had been reported in poliomyelitis and rheumatoid arthritis[3] and since no relief had followed the recommended

From the Department of Medicine, Medical College of the State of South Carolina, and the medical service of Roper Hospital.

1. Bogen, Emil: A Study in Spider Poisoning, J. A. M. A. **86**: 1894-1896 (June 16) 1926.

2. Gilbert, E. W., and Stewart, C. M.: Effective Treatment of Arachnidism by Calcium Salts: Preliminary Report, Am. J. M. Sc. **189**: 532-536 (April) 1935.

3. Kabat, Herman, and Knapp, M. E.: The Use of Prostigmine in the Treatment of Poliomyelitis, J. A. M. A. **122**: 989-995 (Aug. 7) 1943. Trommer, P. R., and Cohen, Abraham: The Use of Neostigmine in the Treatment of Muscle Spasm in Rheumatoid Arthritis and Associated Conditions: Preliminary Report, ibid. **124**: 1237-1239 (April 29) 1944.

therapy, the idea of trying neostigmine occurred to one of us (J. E. Bell). About six and one-half hours after the bite the patient was given 2 cc. of 1 : 2,000 neostigmine methylsulfate and 1/150 grain (0.0004 Gm.) of atropine sulfate intramuscularly, the latter to counteract the muscarinic effects of neostigmine.

Fifteen minutes after the neostigmine and atropine the abdomen was becoming softer and a wider range of extremity motion was possible. One hour after the injection the patient was comparatively asymptomatic except for a mild headache, the periorbital edema and slight arthralgia in the right ankle. The initial dose of neostigmine and atropine was repeated at four hour intervals for four doses.

The next morning the patient was asymptomatic except for some residual periorbital edema. His blood pressure at the end of twenty-four hours was 110/74 as compared with 150/106 on admission. A slight frontal headache, always relieved with acetylsalicylic acid, remained for thirty-six hours. After six days' observation he was discharged.

COMMENT

1. In a typical case of arachnidism, the symptoms failed to respond to calcium gluconate and sedatives for a period of five and one-half hours.

2. Dramatic and complete relief of muscle spasm and pain followed within one hour the intramuscular injection of 2 cc. of 1 : 2,000 neostigmine methylsulfate with 1/150 grain of atropine sulfate.

3. This single case is presented in the hope that this apparently specific therapy will be tried in other cases without delay.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The following report has been adopted by the Council for publication.

AUSTIN SMITH, M.D., *Secretary.*

PREPARATIONS EXEMPT FROM COUNCIL CONSIDERATION

The following official preparations have been declared exempt from Council consideration for inclusion in New and Nonofficial Remedies, as their actions, uses and nature are sufficiently well understood by physicians not to require such inclusion.

This list has been adopted for publication so that it may be brought to the attention of all manufacturers and other interested groups. From time to time there may be added other drugs, the names of which will also be published.

Iron and Ammonium Citrates
Ferrous Sulfate
Calcium Gluconate
Antimeningococcic Serum
Liver and Stomach Preparations included in U. S. P.
Digitalis Preparations included in U. S. P.
Acetylsalicylic Acid
Caffeine with Sodium Benzoate
Carbon Dioxide
Oxygen
Oxygen-Carbon Dioxide Mixtures
Chlorinated Paraffin (Chlorocosane)
Cinchophen
Neocinchophen
Dextrose Solution
Sodium Chloride Solution
Isotonic Solution of Three Chlorides
Sodium Citrate
Sodium Biphosphate
Magnesium Sulfate
Trioxymethylene (Paraformaldehyde-U. S. P. X)
Methylene Blue
Quinine and Urea Hydrochloride
Salicylic Acid
Sodium Salicylate
Natural Oil of Sweet Birch (Methyl Salicylate)
Pentobarbital Sodium
Papaverine Hydrochloride
Emetine Hydrochloride
Totaquine
Tribasic Calcium Phosphate
Magnesium Trisilicate
Tribasic Magnesium Phosphate
Ichthammol Preparations
Strophanthin

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

ANTIVENIN (LATRODECTUS MACTANS).—An antitoxic serum prepared by immunizing horses against the venom of the black widow spider (Latrodectus mactans).

Actions and Uses.—This material, which is standardized on the basis of its ability to neutralize the venom of the black widow spider when the two are injected simultaneously in mice, is claimed to be indicated in the treatment of patients suffering from symptoms due to bites inflicted by the black widow spider (Latrodectus mactans). Prior to use, tests for serum sensitivity should be made, test material consisting of 1 : 10 dilution of isotonic solution of normal equine serum, which is injected intradermally. If there is a positive skin reaction, an eye test consisting of placing a few drops of the test material on the conjunctiva and watching for ten minutes should be undertaken. If there is a negative result from the skin test, the therapeutic serum can be administered. However, if there is a positive reaction in the eye following the positive skin test, serum therapy should be avoided. If there is a positive skin test and a negative eye test, the individual may be desensitized before administering the serum. The amount of material injected into the skin for the intradermal test should be not more than 0.02 cc. of the test material. The result can be evaluated in ten minutes, a positive reaction consisting of an urticarial wheal surrounded by a zone of erythema.

Associated treatment includes hot plunge baths, intravenous injection of magnesium sulfate, 20 cc. of 10 per cent solution, or intravenous injection of 10 per cent calcium gluconate. Barbiturates may be used for restlessness. Apparently nothing is gained by local treatment at the site of the bite.

Dosage.—An injection of 2.5 cc. of serum is administered intramuscularly.

SHARP & DOHME, INC., PHILADELPHIA

Lyovac Antivenin (Latrodectus mactans): 'Vacule' ampul-vial containing a sufficient amount of lyophilized antivenin to yield 2.5 cc. of restored double-concentrated antivenin with phenol 0.35 per cent as a preservative; packaged with a 2.5 cc. ampul of distilled water and one 1 cc. vial of normal horse serum (diluted 1 : 10) as test and desensitizing material.

A lyophilized antitoxic serum prepared by injecting horses with venom of black widow spiders (Latrodectus mactans).

A process of lyophilization consists in the following: The antivenin in specially designed final containers is immersed in a freezing mixture to congeal the substance rapidly with the least molecular rearrangement. The container is then subjected to a high vacuum to accomplish dehydration, which is continued until the residual moisture content is less than 1 per cent, and finally sealed under vacuum.

PYRIDOXINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1944, p. 618).

The following dosage form has been accepted:

ENDO PRODUCTS, INC., RICHMOND HILL, N. Y.

Solution Pyridoxine Hydrochloride: 1 cc. ampuls of 25 mg. and 50 mg. per cc. and 10 cc. vials of 50 mg. per cc.

SULFATHIAZOLE (See New and Nonofficial Remedies, 1945, p. 202).

The following dosage form has been acepted:

VOGEL LABORATORIES, MOHEGAN LAKE, N. Y.

Emulsion Sulfathiazole 5% and 10% Sterilized: 50 cc. and 200 cc. bottles. A 5 per cent or 10 per cent suspension of sulfathiazole in an emulsion of beeswax, liquid petrolatum, triethanolamine and water.

STAPHYLOCOCCUS TOXOID (See New and Nonofficial Remedies, 1945, p. 565).

The following dosage form has been accepted:

AYERST, MCKENNA & HARRISON, LTD., NEW YORK

Staphylococcus Toxoid: 3 cc. vials containing in each cubic centimeter the toxoid derived from 20,000 necrotizing doses of toxin. Preserved with 1 : 20,000 merthiolate.

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SATURDAY, DECEMBER 8, 1945

ACUTE NONSPECIFIC MYOCARDITIS

Physicians continue to diagnose myocarditis in the absence of inflammatory disease of the myocardium. The clinical syndrome of cardiac insufficiency is often incorrectly labeled myocarditis.

Acute nonspecific myocarditis is an entity characterized by an acute inflammatory process in the myocardium most often secondary to some acute infectious disease. Saphir,[1] who found myocarditis in 240 of 5,626 necropsies, recommends that many sections be taken from the myocardium, since acute myocarditis may involve only small foci as well as extensive areas of the heart muscle. In those who die of an acute infectious disease the primary process frequently so dominates the pathologic picture that the discovery of myocarditis is only secondary. Cases of sudden death from acute infectious disease have incited both the clinician and the pathologist to a careful examination of the myocardium. Jaffe,[2] from a careful investigation of 165 cases, concluded that there is a causal relationship between myocarditis and sudden death, myocarditis having proved to be second only to perforated aortic aneurysms as the cause of sudden death. The anatomic picture in all these cases is so uniform both macroscopically and microscopically that morphologic classification is not possible. Classification in relation to the accompanying infection is valuable clinically but is unsatisfactory pathogenically.

Acute nonspecific myocarditis occurs secondary to many diseases of bacterial or virus origin and to some conditions of undetermined origin. The following incomplete list mentions conditions in which acute myocarditis has been demonstrated at necropsy: diphtheria, typhoid, paratyphoid, typhus, dysentery, mumps, pneumonia, scarlet fever, meningococcic infection, gonococcic infection, tularemia, streptococcic and pneumococcic meningitis, pyelitis, bronchiectasis, infectious mononucleosis and acute suppurative tonsillitis. A special form of myocarditis has been reported in the literature as Fiedler's myocarditis, isolated myocarditis or fibrous myocarditis. It cannot be differentiated from other types of nonspecific myocarditis microscopically. It is classified separately because evidence of a primary disease is not demonstrable at necropsy and a primary disease was not evident clinically. This does not mean that a primary disease did not exist.

The New York Heart Association has set up criteria for the diagnosis of myocarditis.[3] The diagnosis can be made correctly more frequently if it is realized that acute myocarditis is not a rare complication of infectious disease. Candel and Wheelock[4] present a clinical study of 11 cases in which they made a diagnosis of acute nonspecific myocarditis. These cases presented the following common characteristics: (*a*) Each was associated with an acute infectious disease—peritonsillar abscess (1), pneumonia (2), scarlet fever (1), gonococcic arthritis (3), cystitis (1), infectious mononucleosis (1) and typhus (2). (*b*) Each had a rapid erythrocytic sedimentation rate even when the primary disease had abated. (*c*) Each showed significant electrocardiographic alterations. Diagnosis was based on physical signs and symptoms and on electrocardiographic findings. Candel and Wheelock believe that the significance of electrocardiographic abnormalities in the diagnosis of acute nonspecific myocarditis is not fully appreciated.

Evidence has been collected by the internist to show that alterations of the electrocardiogram frequently occur in the course of many acute and occasionally in chronic infectious diseases. Although these changes would be recognized as important in rheumatic disease, they are overlooked when they occur in the course of acute infectious diseases nonrheumatic in origin. In the course of acute rheumatic fever the electrocardiographic changes may return to normal. The clinical interpretation is that the pathologic process responsible for the change has resolved without leaving permanent damage to the myocardium. The same interpretation may be placed on electrocardiographic changes occurring in other acute infectious diseases. Patients whose convalescence from acute infection is slow, with profound asthenia after the acute disease has subsided, should be examined carefully for myocarditis. Slight precordial discomfort, angina pectoris and breathlessness associated with or occurring shortly after an acute infectious disease should also be regarded as indications of myocarditis. Arrhythmias and gallop rhythm should be investigated—a persistently rapid sedimentation rate after the primary infection has subsided should be regarded with suspicion. A correct appraisal of acute

1. Saphir, Otto: Myocarditis: A General Review, with an Analysis of 240 Cases, Arch. Path. **32**: 1000 (Dec.) 1941.

2. Jaffé, Rudolf: General Considerations on Pathogenesis: Syphilitic Aortitis, Myocarditis, Hepatic Cirrhosis, J. Lab. & Clin. Med. **29**: 139 (Feb.) 1944.

3. New York Heart Association: Nomenclature and Criteria for Diagnosis of Diseases of the Heart, ed. 4, 1942.

4. Candel, Samuel, and Wheelock, M. C.: Acute Nonspecific Myocarditis, Ann. Int. Med. **23**: 309 (Sept.) 1945.

myocarditis is important. Scherf and Boyd [5] assert that with the frequency of infectious diseases and miscellaneous infections there are but few persons who during a lifetime do not have inflammatory myocardial foci.

THE FUNCTION OF VITAMIN E

Since the definite claim for its existence was made about 1922, vitamin E has assumed several roles in metabolism. The first function associated with this food factor was in connection with reproduction; it prevents the resorption of fetuses in the female and testicular degeneration in the male laboratory rat maintained on a diet composed of purified food substances. Somewhat later a disease called encephalomalacia was produced in chicks restricted to a diet deficient in vitamin E. This condition appears to be associated with impairment of the blood vessels with the resultant cerebral ischemia. By this time vitamin E had been isolated and synthesized; the chemical name of alpha-tocopherol was given to it. Soon it was found that, in line with old observations in rats, paralysis could be reproduced in rabbits and in several other laboratory animals and this experimental muscular dystrophy is now recognized as still another sequel of a lack of vitamin E. Various explanations have been given to account for the foregoing observations; the tocopherols were believed to be natural protectors or antioxidants for other essential substances and to foster the integrity of the capillary walls.

As early as 1936 Martin and Moore [1] called attention to still another phenomenon of vitamin E deficiency: in rats so prepared there occurred a yellowish brown coloration of the uterus due to the collection of a pigment in the muscle of this organ. Skeletal muscle is similarly affected and here the pigmentation is associated with dystrophy.[2] Mason and Emmel [3] have recently described the situation and the progression of the condition in considerable detail. The ovarian pigment seems to be an abnormal product of metabolism formed during cell degeneration in atretic follicles and in regressing corpora lutea. It is phagocytized by the tissue macrophages, giving rise to the abnormal coloration of the tissue. Some of the macrophages escape to the lymph nodes, spleen and liver, where the abnormal pigment is also found. The pigment, resistant to strong acids and alkalis, fat solvents and oxidizing agents, does not contain iron and has not been identified with any known biologic pigment. A determination of the chemical nature of this substance might lead to an understanding of the cellular enzyme system in which vitamin E plays an important part. Although administration of large doses of tocopherol does not cause the pigment to disappear from the ovary, the function of this organ does not appear to be disturbed by the accumulation of the pigment.

Another relationship between vitamin E and tissue pigment has been reported by Granados and Dam.[4] In rats restricted to a ration deficient in alpha-tocopherol but containing fat, there is a progressive loss of pigment from the incisors beginning at the gingival margin. This alteration is attributed to the action of the more highly unsaturated fatty acids on the ameloblasts in the absence of vitamin E.[5] Since tocopherol phosphate brings about a cessation of the greatly increased uptake of oxygen by muscle from an animal lacking vitamin E in the diet,[6] a further study of the abnormal pigmentation and depigmentation described may lead to the implication of the tocopherols in some phase of the biologic oxidative systems in the body.

TROPICAL DISEASES IN THE UNITED STATES

Some diseases supposed to be peculiar to the tropics occur in parts of the United States. Once a disease is detected in an apparently new environment, it is apt to be encountered more frequently thereafter.

Few physicians were at one time aware of the prevalence of pellagra in the United States. In the early nineteen hundreds Babcock, at that time medical superintendent of the South Carolina State Hospital for the Insane, while visiting in Italy, familiarized himself with the clinical aspects of pellagra. He was convinced that the disease prevailed in the insane hospital population group of his native state, and he verified this impression. His observations attracted the attention of other psychiatrists concerned with the institutional care of the insane; eventually pellagra, especially in the Southern states, became widely recognized.

In 1909 the Rockefeller Commission, headed by Stiles, made a county by county survey of a number of Southern states and discovered the presence of uncinariasis in a large percentage of the native poor. In 1920 Symmers and Frost [1] first described granuloma inguinale in 2 native born American Negroes in Bellevue hospital, neither of whom had ever been outside the United States. Within a few years the disease had been recognized in practically every state in the Union. Much the same statement applies to lymphogranuloma venereum, which was once regarded as strictly a tropical malady whereas it is now known to be common in the United States, especially among the colored population.

5. Scherf, David, and Boyd, L. J.: Cardiovascular Diseases, St. Louis, C. V. Mosby Company, 1939.

1. Martin, A. J. P., and Moore, T.: Chem. & Industry **55**: 236, 1936.
2. Martin, A. J. P., and Moore, T.: Chem. & Industry **57**: 973, 1938.
3. Mason, K. E., and Emmel, Anne F.: Yale J. Biol. & Med. **17**: 189 (Oct.) 1944; Anat. Rec. **92**: 33 (May) 1945.
4. Granados, Humberto, and Dam, Henrik: Science **101**: 250 (March 9) 1945.
5. Dam, Henrik, and Granados, Humberto: Science **102**: 327 (Sept. 28) 1945.
6. Houchin, O. B.: J. Biol. Chem. **146**: 313 (Dec.) 1942.

1. Symmers, Douglas, and Frost, A. D.: Granuloma Inguinale in the United States, J. A. M. A. **74**: 1304 (May 8) 1920.

Parsons and Zarafonetis [2] have recently pointed out that "histoplasmosis for many years was believed to be a rare tropical disease" but that "during the past decade the disease has been found widespread in the United States. . . ." They recorded 9 cases originating in Michigan between November 1938 and December 1940. The disease has also been observed in Minnesota, California, Iowa, Tennessee, Ohio, Missouri, Mississippi, Maryland, Virginia, Kentucky, Florida, Indiana, Alabama, Texas, Illinois, Washington, D. C., Oklahoma, Louisiana, New York and North Carolina. In view of the fact that histoplasmosis may be easily overlooked or misinterpreted, it is within the range of probability that it is even commoner than at present suspected.

Only 9 cases of chromomycosis have thus far been recorded in this country. In nearby Cuba, on the other hand, Pardo Castello encountered 20 histologically proved cases in a period of two and one-half years and the disease is correspondingly common in Brazil and Puerto Rico. Many American dermatologists believe that it occurs more frequently in this country than published reports indicate and that it is often overlooked.

Among other tropical diseases to be reckoned with in the United States are typhus, schistosomiasis, cutaneous and visceral leishmaniasis, pinta, onchocerciasis, ancylostomiasis, maduromycosis, yaws and some of the numerous helminthiases. These and probably others will be imported in greater or less numbers not only by returning military personnel but as a result of augmented travel by air. Of those just named, pinta and onchocerciasis are endemic in Mexico and Central America to the extent of many thousands of cases and are thus perilously close to the Texas border, while the others are none too far removed. Onchocerciasis, which is transmitted by a species of fly that infests some of the Western states, is said to display a distinct tendency to migrate northward (Johnstone and Larsen).

Tropical diseases threaten the health of the people of the United States sufficiently to warrant systematic efforts to identify and control them. American schools of medicine should provide adequate and required instruction in tropical diseases. In various seaports laboratories for the routine diagnosis and scientific investigation of these diseases, such as has been recently inaugurated by the Department of Health of the City of New York, should be established. Among other cities, Charleston, San Francisco, Baltimore and New Orleans would be admirable sites for the location of such laboratories, since, among other advantages, each of these cities could provide collaboration with existing medical schools. Doubtless also steamship companies and air lines that are engaged in the tropical trade would embrace the opportunity to participate in programs of this sort. The United Fruit Company for many years has given commendable attention to the problems in question.

2. Parsons, R. J., and Zarafonetis, C. J. D.: Histoplasmosis in Man, Arch. Int. Med. **75**: 1 (Jan.) 1945.

Current Comment

EPIDEMIC DISEASES IN EUROPE

At the time of the collapse of Germany, typhus was widespread; more than 16,000 cases have been reported in the Shaef area since the occupation.[1] The disease has now been practically eradicated from Germany, however, with only 6 cases recorded in the first week of August. Smallpox is now disappearing from the Iberian peninsula, where it was prevalent until recently. Plague has been potentially dangerous along the Mediterranean since the Suez Canal zone and several South American and Palestine ports became infected. The disease has appeared in Corsica, in Malta and in Taranto in southern Italy. In the latter there were 23 cases, of which 11 were fatal between September 3 and September 24. Typhoid has been unusually prevalent in Berlin since June, when 111 cases were reported. It has since reached epidemic proportions, with 382 cases in July, 1,100 in August and 1,708 during the last two weeks of September. Other areas in Germany and in Denmark have also had a high incidence of typhoid. The information regarding diphtheria is scanty, although during the last two years of the war it was the leading epidemic disease in portions of north and central Europe. In France nearly 4,000 cases were reported in June 1945. Although the information is still quite incomplete, several of these diseases are believed to be extensive in the Balkans. For example, there were still around 1,000 cases of typhus in Bosnia alone. Serious epidemics of typhoid have occurred in Albania. Stowman believes that with well planned collaboration and adequate supplies and qualified personnel it should be possible to stamp out typhus in the eastern half of Europe as has been done in the western half. Typhoid and dysentery will be harder to control under present conditions.

INFLUENZA VIRUS VACCINE

Extensive laboratory studies have been made with influenza virus vaccine by many qualified workers, and actual prophylactic trials have been observed as far as the prevailing outbreaks of influenza permit. Safety has been established and prophylactic value demonstrated within the limits of the type of infection existing at the time of making the field trial. Adequate immunity did not develop in each person treated, but the difference in the occurrence of influenza in the treated and control groups was statistically significant. How long this acquired immunity will remain with the treated person under normal living conditions can be proved only by the test of time. A number of other problems related to the antigenic coverage of the vaccine remain to be solved. Acting on the evidence at hand and with the full knowledge that this was not the complete solution, the Commission on Influenza recommended that a reserve stock of vaccine be acquired for use by the Army, if the need occurred. It was recognized that the needs of war could not wait the orderly solution of the problems still remaining. The Public Health

1. Stowman, Knud: Epidemic Situation in Europe, Epidemiological Inform. Bull. **1**: 719 (Oct. 15) 1945.

Service concurred in this decision and through the National Institute of Health agreed to set up minimum requirements to guide the producing laboratories in the production of the vaccine and otherwise to control the product in the same manner as is done with licensed products. Because the biologics law does not lend itself to emergency interpretation, and because there remained problems of production, distribution and immunity studies which needed clarification, it was decided that influenza virus vaccine should not be recommended for license for civilian distribution at that time. In the interim the Public Health Service, through the National Institute of Health, has followed research and production developments. When the evidence became adequate to meet the minimum requirements of the biologics law and production problems had been solved, it was decided to give favorable consideration to recommending the vaccine for license if a qualified manufacturer should apply. A memorandum to this effect has been sent to producing laboratories and others directly concerned. This has been done even though it is realized that many questions still must be solved before the full range of protection afforded by this vaccine is known. In the meantime the evidence indicates that a reasonable degree of protection is developed against the type of influenza prevailing during these war years.

EFFECT OF GLUTAMIC ACID ON PETIT MAL TYPES OF EPILEPSY

The observation that grand mal attacks of epilepsy are in the majority of the cases more or less completely controlled by anticonvulsant therapy, whereas petit mal types of attack not infrequently are not influenced by medication, suggests that the trigger mechanism in the two types may not be identical. The petit mal seizures respond favorably to fasting and to a ketogenic diet. The difficulties, however, in maintaining a dietary regimen that will produce ketonuria led to a search for acidosis-producing drugs. From theoretical considerations, Waelsch thought that *dl*-glutamic acid or *l*-glutamic acid should be capable of producing acidosis. Furthermore, *l*-glutamic acid is known to be metabolized by slices of brain tissue. Price and his associates [1] found that 4 Gm. of *dl*-glutamic acid administered three times daily was sufficient to maintain the p_H of the urine at about 5.0. Administration of this amino acid together with the usual anticonvulsant therapy (diphenylhydantoin-phenobarbital combination) was effective in decreasing the frequency of petit mal seizures in their patients. There was also a pronounced mental and physical alertness. Grand mal attacks were not affected by the drug. Spangler [2] administered glutamic acid to 6 patients subject to both grand mal and petit mal seizures and selected because their petit mal attacks were not influenced by the anticonvulsant drug therapy. When glutamic acid was added to the crotalin-diphenylhydantoin-phenobarbital therapy the petit mal seizures were reduced in frequency and modified in character and severity. The effect was practically the same in all 6 patients. The amount of acid administered was guided by a daily recording of the urinary p_H in an effort to keep the hydrogen ion concentration below 5.0. The p_H of one of these patients was recorded daily for one year. The beneficial effect of glutamic acid in lowering the p_H of the urine in epilepsy, as illustrated in this case, and the fact that menstruation, even when the patient is taking glutamic acid, often causes an increase in the petit mal seizures, suggests that endocrine function may be less of a factor in the etiology of petit mal than the increase in the hydrogen ion concentration of the urine during menstruation. It is possible, Spangler believes, that petit mal seizures may result more from an altered immunologic allergic response, as shown by a decreased hydrogen ion concentration in the urine.

1. Price, J. C.; Waelsch, H., and Putnam, T. J.: *dl*-Glutamic Acid Hydrochloride in Treatment of Petit Mal and Psychomotor Seizures, J. A. M. A. **122**: 1153 (Aug. 21) 1943.
2. Spangler, R. H.: Effect of Glutamic Acid on the Hydrogen Ion Concentration (p_H) of the Urine in Petit Mal Types of Epilepsy, Ann. Allergy **3**: 241 (July-Aug.) 1945.

ACCIDENTAL SUFFOCATION OF INFANTS

Davison [1] calls attention to the fact that statistics relating to infant suffocation are misleading in that they err on the side of overestimation. During the years 1938 to 1944, 318 deaths considered as possibly due to asphyxia were reported to the coroner in Birmingham, England. Of these infants only 38 were shown to have died of asphyxia. Eighteen died from mechanical suffocation while in bed with parents or some other person, and 6 died from mechanical suffocation while sleeping alone. The remaining 280 deaths were due to natural causes, principally bronchopneumonia, often associated with otitis media. Davison stresses that a postmortem examination is indispensable as part of the routine investigation in every case in which suffocation is considered a likely cause of death. Since this procedure was adopted in Birmingham in 1929 there has been a pronounced fall in the number of deaths of infants due to suffocation.

1. Davison, W. H.: Accidental Infant Suffocation, Brit. M. J. **2**: 251 (Aug. 25) 1945.

CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Elsewhere in this issue is the semiannual listing of postgraduate continuation courses for veteran and civilian physicians prepared by the Council on Medical Education and Hospitals of the American Medical Association. These courses are offered during the period Jan. 1 to July 16, 1946. The listing is about 30 per cent longer than that for the preceding period, as a result of increased facilities, which have been developed primarily for returning medical officers. More important than mere numbers of courses is the fact that more of the courses are of longer duration, more are being offered by universities and medical schools and there is a wider geographic distribution. This expansion and improvement of offerings will greatly benefit the large number of officers seeking such work.

MEDICINE AND THE WAR

ARMY

NEW RELEASE CRITERIA FOR ARMY MEDICAL DEPARTMENT DEMOBILIZATION

The Secretary of War has announced the following criteria for the separation of nonregular Army Medical Department officers effective December 1:

A. Medical and Dental Corps Officers

Medical and Dental Corps officers are eligible for release from active duty if they meet or exceed any of the following criteria:

(1) Their adjusted service rating is 70 or they have performed forty-two months' active service.

(2) They are 48 years of age, to the nearest birthday.

(3) Exceptions to (1) are officers with primary or secondary classifications a, b or c in the following military occupational specialty categories:

a. Officers in this group will be separated with adjusted service rating of 70 or length of service forty-five months:

3105	Gastroenterology	3130	Neuropsychiatry
3107	Cardiology	3150	General surgery
3111	Urology	3306	Radiology
3112	Dermatology	3325	Pathology
3115	Anesthesia	3180	Physical therapy

b. Officers in this group will be separated with adjusted service rating score of 80 or length of service prior to Dec. 7, 1941:

3106	Ophthalmology-oto-rhinolaryngology	3139	Internal medicine.
		3152	Plastic surgery
3125	Ophthalmology	3153	Orthopedic surgery
3126	Otorhinolaryngology		

B. Veterinary Corps Officers

Veterinary Corps officers are eligible for release from active military duty if their adjusted service rating is 70 or if they are 42 years of age to the nearest birthday or if they have performed forty-two months' active service.

C. Sanitary Corps Officers

Sanitary Corps officers are eligible for release from active military duty if their adjusted service rating is 60 or if they are 42 years of age to the nearest birthday or if they have performed forty-two months of active service.

D. Medical Administrative Corps Officers

Medical Administrative Corps officers are eligible for release from active military duty if their adjusted service rating is 60 or if they are 42 years of age or if they have performed forty-two months' active service.

E. Army Nurse Corps Officers and Physical Therapists

(1) Army Nurse Corps officers and physical therapists are eligible for release from active military duty if their adjusted service rating is 25 or if they are 30 years of age to the nearest birthday or if they have performed twenty-four months of service.

(2) Army Nurse Corps officers and physical therapists with dependent children under 14 years of age are eligible for release from active military duty.

(3) Army Nurse Corps officers and physical therapists who are married are eligible for release.

(4) Army Nurse Corps officers and physical therapists whose physical status is LUS (limited United States Service) are eligible for release.

F. Medical Department Dietitians

(1) Medical Department dietitians are eligible for release from active military duty if their adjusted service rating is 30 or if they are 35 years of age to the nearest birthday.

(2) Medical Department dietitians with dependent children under 14 years of age are eligible for release from active military duty.

(3) Medical Department dietitians who are married are eligible for release.

(4) Medical Department dietitians whose physical status is LUS (limited United States service) are eligible for release.

Definitions and Procedure

The following definitions apply:

A. Length of service as used herein includes total active commissioned and enlisted service, continuous or otherwise, since Sept. 16, 1940 and continues to accrue with the passage of time.

B. Adjusted service rating score as used herein is the score computed for each individual as of Sept. 2, 1945.

Officers who become eligible under this policy will be reported available for separation within ninety days of date of eligibility unles they have volunteered to remain in the service for any additional period of time under existing regulations or instructions. It is desired that maximum care be exercised to avoid the retention of any officer whose services are not absolutely essential to perform the assigned mission. There will be no consideration of military necessity except for those individuals retained under the provisions of section VII of War Department Circular 321, Oct. 20, 1945.

Requests for replacements will be submitted through normal channels through the Office of the Surgeon General.

Officers who are eligible for release in accordance with the foregoing criteria will be ordered to an appropriate separation center or point for processing.

Authority for separation accomplished in accordance with the Medical Department criteria will be Readjustment Regulations 1-5.

Publicity release of the criteria for Dec. 1, 1945 as listed above will be made only, repeat only, by the War Department.

DISTINGUISHED SERVICE MEDAL TO GENERAL DRAPER

Major Gen. Warren F. Draper, Assistant Surgeon General, United States Public Health Service, was recently awarded the Distinguished Service Medal. General Draper "served with conspicuous distinction as chief of the Public Health Branch, G-5 Division, Supreme Headquarters, Allied Expeditionary Force, from May 1944 to June 1945. He directed the formulation and execution of the Supreme Commander's policies governing public health in liberated nations and conquered territories.

Drawing on his many years' experience, he coordinated all resources for the prevention and control of civilian epidemics which might have interfered with military operations and successfully met tremendous problems caused by the chaotic conditions left by the war in many areas. The plans and procedures drawn up by General Draper were successful in every test. Through controlling disease in Europe, he contributed in the highest degree to the success of the Allied forces." General Draper graduated from Harvard Medical School, Boston, in 1910 and entered the service July 12, 1910.

HOLDS CONFERENCES

Medical officers of the Sixth Service Command held a conference at the John B. Murphy Memorial Auditorium of the American College of Surgeons, Chicago, November 9. Numerous papers were presented and discussed concerning technical matters affecting the profession.

A Neuropsychiatric Conference was also held under the auspices of the Sixth Service Command at the John B. Murphy

Memorial Auditorium on November 16-17. Many papers were presented on neurology, psychiatry and ancillary activities, which were open for discussion by Navy and civilian groups.

Civilian physicians were invited to attend these conferences. Both conferences were opened by Col. Don G. Hilldrup, surgeon, Sixth Service Command.

74th MEDICAL BASE DEPOT COMPANY AWARDED PLAQUE

The 74th Medical Base Depot Company was recently awarded the Meritorious Service Unit Plaque "for superior performance of duty in the accomplishment of exceptionally difficult tasks in Mindanao and the Philippine Islands." Commending the company for its immediate construction of a medical supply base and, in spite of daily heavy rains, its efficient organization and distribution of supplies, the citation concluded "wholeheartedly cooperative in spirit, united in maintaining a cheerful and enthusiastic attitude at all times, the 74th Medical Base Depot Company established an outstanding record and contributed materially to the continued success of our forces in the Southwest Pacific Area."

ARMY AWARDS AND COMMENDATIONS

Colonel John C. Fitzpatrick

The Legion of Merit was recently awarded to Col. John C. Fitzpatrick, formerly of Washington, D. C., who, the citation read, "as medical liaison officer to the chief of transportation from June 1943 to March 1945 was charged with formulating plans and developing procedures for evacuating by ship the sick and wounded from all theaters of operation to the United States. He studied current and future requirements of each theater and devised a system to meet these transportation needs on schedule. To effect proper distribution of patients on their arrival in this country, he inaugurated a system of code reporting whereby the place of residence or state of choice and the military and medical classification of all patients could be determined in advance of arrival. He solved many complex problems incident to obtaining, equipping and manning hospital ships, to furnishing adequate medical facilities for troop transports, to establishing debarkation hospitals and hospital wards and to securing kitchen cars. Owing in substantial part to his foresight and determination, several large ships were devoted almost exclusively to evacuating patients on return trips. Through his zeal for the care and comfort of the sick and wounded en route to this country, he contributed materially to maintaining their morale at a high level." Dr. Fitzpatrick graduated from Northwestern University Medical School, Chicago, in 1935 and entered the service July 1, 1936.

Lieutenant Colonel Wilmot C. Townsend

Lieut. Col. Wilmot C. Townsend, formerly of Hartford, Conn., was recently awarded the Bronze Star for meritorious service while directing the medical activities of the 81st Station Hospital. The hospital also received a meritorious service plaque for excellent work in returning 83 per cent of its patients to active duty. The especially appreciative citation accompanying the award stated that "in connection with military operations in the Mediterranean Theater of Operations from July 12, 1943 to May 8, 1945, as chief of the medical service, 81st Station Hospital, during this period, Lieutenant Colonel Townsend was responsible for the care of 7,643 patients, 83 per cent of whom were returned to duty. Because of his outstanding professional ability, his attention to duty and his personal attributes, he was a source of inspiration to his patients and his co-workers. In addition, Lieutenant Colonel Townsend was a gifted teacher, and the personal interest he displayed in the development of his junior staff members was in a great degree responsible for the superior standards of medical service throughout his unit, thereby reflecting great credit on himself and the medical corps of the Army of the United States." Dr. Townsend graduated from Harvard Medical School, Boston, in 1925 and entered the service Sept. 10, 1942.

Major Richard F. Richie

The Bronze Star was recently awarded to Major Richard F. Richie, formerly of Raleigh, N. C., for meritorious service in military operations against the enemy from Dec. 13, 1944 to May 8, 1945 in the United Kingdom, France, Belgium and Germany. The citation stated that "Major Richie as division neuropsychiatrist organized a psychologic leadership school for junior officers in the division that contributed materially in decreasing the number of psychiatric casualties incurred during combat. Through his judgment, ability and initiative many cases of exhaustion that otherwise would have been evacuated from the front were returned to duty." Dr. Richie graduated from the University of Buffalo School of Medicine in 1927 and entered the service July 11, 1942.

Lieutenant Colonel Leonard J. Hospodarsky

Lieut. Col. Leonard J. Hospodarsky, formerly of Ridgeway, Iowa, was recently awarded the Bronze Star for meritorious service in connection with military operations from January 1944 to May 1945 with the IX Engineer Command in the European theater. The citation accompanying the award states that "Lieutenant Colonel Hospodarsky's efforts produced eloquent evidence in the form of complete absence of communicable disease epidemics on the continent, the low hospital rate and the excellent general physical condition of the personnel of the command." Dr. Hospodarsky graduated from State University of Iowa College of Medicine, Iowa City, in 1931 and entered the service Aug. 18, 1941.

Major E. H. Truex Jr.

Major E. H. Truex Jr., formerly of East Hartford, Conn., was recently awarded a citation on behalf of the aural rehabilitation section of the Army's Deshon General Hospital. The citation, which was presented to Major Truex as chief of the section, was from headquarters of the Third Service Command in Baltimore for "excellent quality of work with a minimum amount of lost time and the economical use of personnel, materials and equipment" and was signed by Brig. Gen. T. B. Catron. Major Truex heads the rehabilitation for the hard of hearing and deafened section at Deshon General Hospital. He graduated from Harvard Medical School, Boston, in 1936 and entered the service Sept. 10, 1942.

Lieutenant Colonel Fred P. Long

Lieut. Col. Fred P. Long, formerly of North Platte, Neb., was recently awarded the Bronze Star for meritorious service and noteworthy performance of duty as malariologist at Guadalcanal. The citation commended his wide knowledge of insect control; and his efficient utilization of the troops and the materials at his disposal were reflected in the remarkable reduction in the incidence of malaria and other insect borne diseases. Dr. Long graduated from the University of Tennessee College of Medicine, Memphis, in 1930 and entered the service Oct. 27, 1941.

Major Early B. Lokey Jr.

The Bronze Star was recently awarded to Major Early B. Lokey Jr., formerly of Hattiesburg, Miss., for meritorious achievement on Leyte and Okinawa. He participated in both campaigns as regimental surgeon with the 382d Infantry. Dr. Lokey graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1941 and entered the service July 1, 1942.

Lieutenant Colonel Timothy Mullen

Lieut. Col. Timothy Mullen, formerly of Seneca, Ill., was recently awarded the Bronze Star for meritorious service in support of military operations against the enemy in northern Luzon and the Philippines from Feb. 15, 1945 to May 10, 1945. Dr. Mullen graduated from the University of Illinois College of Medicine, Chicago, in 1927 and entered the service March 5, 1941.

Captain Elwood O. Horne

Capt. Elwood O. Horne, formerly of Shrewsbury, Mass., was recently awarded the Bronze Star, the Purple Heart and the Silver Star. Dr. Horne graduated from Tufts College Medical School, Boston, in 1936 and entered the service May 21, 1943.

VETERANS

VETERANS REHABILITATION CLINIC OF THE PRESBYTERIAN HOSPITAL

A rehabilitation clinic for veterans was opened at the Columbia-Presbyterian Medical Center, New York, to be known as the Veterans Rehabilitation Clinic of the Presbyterian Hospital. The clinic held its first session November 7 and has held weekly sessions since that time.

All services will be offered to veterans free of charge. The clinic plans to treat those types of neuropsychiatric problems in which a relatively short term psychotherapeutic approach can reasonably be expected to be of decided benefit to the patient. Cases will be referred to the clinic by various government and community agencies dealing with the veteran, and in addition it is anticipated that some veterans will refer themselves directly to the clinic.

The clinic is staffed by twelve neuropsychiatrists, but as the need arises this number will be increased. Consultations will be available with members of the medical staff in an effort to treat organic as well as functional diseases. All of the laboratory facilities of the medical center will be available for these patients. Clinical psychologists will carry out various personality and aptitude studies. Occupational therapy will be directed by a therapist specially trained in rehabilitation work. Since the ultimate goal of the clinic is to help the veteran to become an active functioning member of the community once more, a committee of laymen is being formed to cooperate with the clinic in problems of employment. This committee will be made up of representatives of various types of industry and business and will work in close cooperation with the clinic.

VETERANS' ADMINISTRATION PLANS FOR WAR AMPUTEES

Services for war amputees, a subject which has come to national attention since the House Subcommittee on Aid to the Physically Handicapped disclosed the inadequate facilities currently available, was reviewed before the subcommittee again on November 20, when Major Gen. Paul R. Hawley, former chief surgeon in the European Theater of Operations and now acting surgeon general of the Veterans Administration, appeared as a witness. General Hawley presented the plans of the Veterans Administration for improving services to the boys who lost limbs in battle.

NAVY

NAVY REDUCES VISION STANDARDS

Under new standards approved by the Secretary of the Navy, Naval Academy candidates with a slight degree of myopia may be considered for acceptance if they still have 20/20 vision in each eye. Minimum vision required of line candidates for commission in the regular Navy is now 15/20 in each eye correctable to 20/20; for staff corps candidates and officers assigned to engineering duty only and to other specialized duty, 8/20 in each eye correctable to 20/20. Previously, requirements for commission in the line were 18/20 in each eye correctable to 20/20, and for staff corps officers 12/20 in each eye correctable to 20/20. Any degree of myopia or myopic astigmatism formerly disqualified a candidate for the Naval Academy. New standards were decided on after careful study and with particular consideration for the excellent record of accomplishment during the war by officers and enlisted personnel who had a moderate degree of visual refractive error.

CAPT. WINCHELL McKENDREE CRAIG NOMINATED REAR ADMIRAL

Capt. Winchell McKendree Craig, veteran of two wars and chief of surgery at the naval hospital in Bethesda, Md., was recently nominated to the rank of rear admiral, the first time in the history of the Navy that a medical corps reserve officer has been nominated to that rank. In World War I Captain Craig served in the Army as acting war medical officer at the base hospital, Fort George G. Meade. He entered the Navy after Pearl Harbor as a commander and in 1943 was awarded the Medical Reserve Medal with bronze star for twenty years as a medical reserve officer. Dr. Craig is the inventor of the Craig headrest, a device which has proved invaluable in speeding up brain surgery in World War II. He graduated from Johns Hopkins University School of Medicine, Baltimore, in 1919.

NAVY AWARDS AND COMMENDATIONS

Captain Charles W. Shilling

A Letter of Commendation was recently presented to Capt. Charles W. Shilling, formerly of New London, Conn. The citation accompanying the award read "For outstanding achievement in the line of duty as submarine medical examiner and officer in charge of the medical research department from September 1938 to August 1945. Captain Shilling, by his diligence and foresight in planning and his outstanding ability in the scientific research field, developed a program that greatly aided submarine warfare. In establishing and maintaining liaison between governmental agencies, civilian educational and scientific groups, foreign research groups and the United States Army Research Group, Captain Shilling by untiring zeal and ability has been able to secure results of the highest value to the Navy. Captain Shilling's successful accomplishment in the research and scientific field reflects great credit on himself and the United States Naval Service." Dr. Shilling graduated from the University of Michigan Medical School, Ann Arbor, in 1927 and entered the service July 28, 1927.

Lieutenant Richard Lawrence Merkel

The Air Medal was recently awarded to Lieut. Richard Lawrence Merkel, formerly of Freeport, Ill., "for meritorious achievement in aerial flight as flight surgeon, Air Group 32, attached to the U. S. S. *Langley*, during operations in the enemy Japanese held Marshall, Caroline and Philippine Islands areas, from Jan. 29 to Sept. 23, 1944. Participating in numerous strikes and flights during this period, Lieutenant Merkel rendered gallant service and by his professional skill and courageous devotion to duty in the face of grave hazards contributed essentially to the maintenance of high morale in his air group and to the successful fulfilment of these vital missions. His exemplary conduct and fearless disregard for his own personal safety reflect the highest credit on Lieutenant Merkel and the United States Naval Service." Dr. Merkel graduated from Loyola University School of Medicine, Chicago, in 1942 and entered the service Dec. 22, 1942.

Commander W. Stuart Henderson

Comdr. W. Stuart Henderson, formerly of Akron, Ohio, was recently awarded the Navy's commendation ribbon for "high professional skill and initiative" in treating the wounded aboard Gen. Douglas MacArthur's command ship, the U. S. S. *Nashville*, which lost 133 men killed and 190 wounded through the attack of a Jap suicide plane. Dr. Henderson graduated from the University of Toronto Faculty of Medicine in 1923 and entered the service Dec. 17, 1942.

Commander John F. Oakley

Comdr. John F. Oakley, formerly of New Orleans, was recently awarded the Navy and Marine Corps Medal for heroism in action against the enemy on Saipan and Tinian during which, on several occasions, he continued to operate in an unprotected surgery despite fire and air raid alerts, after ordering other patients removed to places of relative safety. Dr. Oakley graduated from Tulane University of Louisiana School of Medicine, New Orleans, in 1929 and entered the service Sept. 26, 1942.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Fonde, William G., Capt., 301 Northwest Blvd., Chickasaw.
Holmes, Michael, Lt. Col., Abbeville.
Johnson, Simon O., Major, Veterans Adm., Tuskegee.
Rodriguez, Jose M., Capt., Louisville.

Arizona

Nugent, Arthur G., 1st Lt., 1024 9th St., Douglas.
Thayer, Kent H., Major, 808 Prof. Bldg., Phoenix.

Arkansas

Alford, Thomas D., Capt., 200 Midland Ave., Little Rock.
Brizzolara, Charles M., Capt., 217 E. 6th St., Little Rock.
Parsons, Wilfred R., Capt., 1620 Gaines St., Little Rock.

California

Batten, Charles T. Jr., Major, Camarillo State Hosp., Camarillo.
Brown, John W., Major, 1248 Arguello, San Francisco.
Carlson, Carl O., Capt., 511 Rutland St., San Jose.
Chain, John S., Major, 2220 E St., Eureka.
Cleave, David C., Lt. Col., P. O. Bldg., Beach Rd., Belvedere.
Cressman, Ralph D., Major, 386 Dana Ave., Palo Alto.
Danstrom, John R., Capt., 4220 Cedar Ave., Long Beach.
Darling, Herbert H., Lt. Col., 90 Woodland Ave., San Francisco.
Denicke, Ernest W., Major, 1010 B St., San Rafael.
Ehrlich, Alfred S., Capt., 9157 Alden Dr., Beverly Hills.
Fagan, Shuler F., Major, 1930 Wilshire Blvd., Los Angeles.
Freyermuth, Otto G. Jr., Capt., 35 Aptos Ave., San Francisco.
Geen, Robert S., Lt. Col., 3934 Greenwood Ave., Oakland.
Henning, Berthel H., Lt. Col., 71 Lopez Ave., San Francisco.
Heppner, George J., Capt., 450 Sutter, San Francisco.
Ilfeld, Frederick W., Major, 1930 Wilshire Blvd., Los Angeles.
Jacobs, Joseph J., Lt. Col., 1478 38th Ave., San Francisco.
Kistler, Lewis M., Major, 1046 S. Wilton Pl., Los Angeles.
Kloss, Richard G., Lt. Col., 2623 Regent St., Berkeley.
Leimbach, John H. Jr., Capt., 728 22d St., San Francisco.
Mack, Edward G., Capt., 9615 Brighten Way, Beverly Hills.
Martin, Walter P., Capt., 5147 10th Ave., Los Angeles.
Masler, Sherman, Major, 4524 Sylmar, Van Nuys.
Maytum, Harry R., Major, 229 18th St., Merced.
Mell, Charles N., Major, 411 30th St., Oakland.
Mock, Duane V., 1st Lt., Orange County Hosp., Orange.
Moore, Herbert L., Capt., 935 B St., Eureka.
Novick, William, Capt., 650 S. Cochran Ave., Los Angeles.
Nuyens, Louis C., Capt., 184 Ewing Terrace, San Francisco.
Osborne, Clyde J., Capt., 3660 28th St., San Diego.
Parker, James A., Capt., 615 L St., Merced.
Perlmutter, Henry A., Major, 2223 Channing Way, Berkeley.
Perry, William J., Major, 441 Salem St., Chico.
Pratt, John R., Capt., 8426 Ridpath Dr., Los Angeles.
Pucci, Ugo J., Capt., 1729 8th Ave., Sacramento.
Robinson, Louis L., Major, 1010 B St., San Rafael.
Roe, William F., 1st Lt., 2628 Armstrong Ave., Los Angeles.
Rustad, William H., Capt., 490 Post, San Francisco.
Smart, Bret W., Major, 281 Juanita Way, San Francisco.
Starr, Wilmer H., Capt., 1342 ¾ N. Edgemont, Hollywood.
Tainter, Eugene G., Capt., 2361 California, San Francisco.
Thale, H. B., Capt., L. A. County GH, Box 257, Los Angeles.

Colorado

Bramley, John G., Capt., 2051 Elm St., Denver.
Forbes, Burton L., Capt., 1306 Humboldt St., Denver.
Kuykendall, Fred D., Capt., Eaton.
Lefevre, Harry W. Jr., Lt. Col., 2034 Dahlia, Denver.
Olsen, Frank B., Capt., Box 162, Center.

Connecticut

Adams, Arthur J., Capt., 839 Williams St., Bridgeport.
Berlowe, Max L., Capt., 35 Stimson Rd., New Haven.
Goldstein, Emanuel, Capt., Municipal Hosp., Hartford.
Josephs, William W., Major, 105 Dwight St., New Haven.
Lieberman, David L., Capt., Chester.
McGuire, Frank J., 1st Lt., 29 Whitfield St., Guilford.
Maislen, Sidney E., Major, 415 Woodland St., Hartford.
Massey, Daniel M., Capt., 1025 Noble Ave., Bridgeport.
Murphy, John C., Major, Inafield, Redding.
O'Connell, Edward B., Capt., 8 9th St., Derby.
Schneider, William, Capt., 34 Union St., Rockville.
Serrell, Howard P., Major, Taconic Rd., Greenwich.
Thorne, Lewis, Major, 109 College St., New Haven.

District of Columbia

Bukantz, Samuel C., Capt., 1020 19th St. N.W., Washington.
Suttenfield, F. D., Lt. Col., 1818 R St. N.W., Washington.

Florida

Chunn, Charles F., Major, 2416 Watrous Ave., Tampa.
Harmon, James P., Major, Box 568, Quincy.
Jennings, W. L., Capt., 807 N. Atlantic Ave., Daytona Beach.
McTurnan, Robert W., Capt., Tampa Municipal Hosp., Tampa.
Saslaw, Milton S., Major, 1238 S. W. 8th St., Miami.

Georgia

Dowman, Charles E., Major, 630 Linwood Ave. N.E., Atlanta.
Gavin, James F., Major, Fort Gaines.
Norwood, S. W., 1st Lt., 1761 Westwood Ave. S.W., Atlanta.
Trimble, George X., Capt., Grady Hosp., Atlanta.

Idaho

Hancher, William H., Capt., Weiser.
Scott, Russell T., Major, Lewiston.
Smith, Robert S., Lt. Col., 1221 Harrison Blvd., Boise.
Stowe, Harwood L., Major, 125 Lincoln St., Twin Falls.

Illinois

Adler, Samuel, Capt., 302 S. 3d St., Oregon.
Allen, Harvey S., Lt. Col., 174 E. Pearson St., Chicago.
Armstrong, Robert B., Capt., 1935 Oxford St., Rockford.
Barnes, Gareth B., Capt., 104 N Commonwealth Ave., Elgin.
Bates, Alvin F., Capt., 3849 Addison St., Chicago.
Benkendorf, Richard C., Capt., 1020 Washington, Bushnell.
Berger, Earl R., Capt., 432 Belmont Ave., Chicago.
Berman, Alex M., 1st Lt., 1375 Greenleaf Ave., Chicago.
Bertucci, Joseph A., Capt., 4929 W. Rice St., Chicago.
Bolton, William W., Capt., 530 Washington Ave., Wilmette.
Brobst, Charles D., Capt., 427 S. Lincoln Ave., Aurora.
Brown, King D., Major, 5501 Prairie Ave., Chicago.
Castaldo, Enzo F., Lt. Col., 953 N. St. Louis Ave., Chicago.
Cohrs, Clarence C., Capt., 182 E. 154th St., Harvey.
Costin, Max, Capt., 5841 Maryland Ave., Chicago.
Curtis, George H., Capt., 656 Wrightwood, Chicago.
DeLeon, Fernando, Capt., RFD 3, Palantine.
Deuterman, Joel L., Col., Pelton Clinic, 102 N. Spring St., Elgin.
Dorris, Victor M., Capt., 1850 W. Jackson, Chicago.
Fahrner, George V., Capt., 809 Douglas St., Joliet.
Fairbairn, James P., 1st Lt., 503 W. 117th St., Chicago.
Fitzgerald, Maurice D., Capt., 5646 Sheridan Rd., Chicago.
Fort, Richard G., Major, 820 Mulford St., Evanston.
France, John T., Capt., Findlay.
Freedman, Bernard S., Capt., 1727 W. Albion St., Chicago.
Friedman, Louis B., Capt., 6424 S. Central Ave., Chicago.
Garnello, John M., Capt., 2621 W. 61st St., Chicago.
Garrick, Samuel, Capt., 4140 S. Halsted St., Chicago.
Gertz, George J. D., Capt., 5134 S. Harper Ave., Chicago.
Greenberg, Leo J., Major, 5238 Drexel Ave., Chicago.
Greene, Earle I., Lt. Col., 524 Melrose St., Chicago.
Griffith, Paul R., Capt., 6804 Windsor Ave., Berwyn.
Headland, Paul B., Major, 9246 S. Damen Ave., Chicago.
Hoebel, Frederick C., Capt., 303 E. Superior St., Chicago.
Jackson, Edward L., 1st Lt., 1640 W. Adams St., Chicago.
James, David E., Major, 616 E. 2d St., Belvidere.
Jurgens, Johannes J., Capt., 4432 N. Francisco Ave., Chicago.
Kallal, Thomas E., Capt., 1332 S. Austin Blvd., Cicero.
Kalom, Lawrence, Capt., 3600 Roosevelt Rd., Chicago.
Kram, David D., Lt. Col., 104 S. Michigan Ave., Chicago.
Kramer, Charles F., 1st Lt., 2010 E. 77th St., Chicago.
Krieger, Leslie W., 1st Lt., McHenry.
Kroulik, William J., Capt., Berwyn.
Laden, Edward L., Capt., 4612 Greenwood Ave., Chicago.
Lees, William M., Capt., 955 N. Hoyne Ave., Chicago.
Link, G. S., Capt., Presby. Hosp., 1753 Congress St., Chicago.
Lockhart, Edmund S., Major, 105½ W. State St., Nokomis.
Loeppert, William A., Major, 1737 N. Nagle, Chicago.
McCulley, Robert L., Capt., Pecatonica.
McEwen, Ernest G., Major, 1703 Chicago Ave., Evanston.
Miller, Howard R., Major, 206 Biltmore, Peoria.
Moisant, Bernard E., Capt., 809 Zeigler, Aurora.
Munson, Frederick W., Major, 145 W. Bluff, Streator.
Nelson, Bertram G., Major, 5632 Kenwood Ave., Chicago.
O'Brien, George F., Lt. Col., 7312 Ridgeland Ave., Chicago.
Okner, Henry B., Capt., 4221 W. Jackson Blvd., Chicago.
Olsson, Roland C. O., Capt., 29 W. 111th St., Chicago.
Parker, Charles D., Capt., 1243 N. Ashland Ave., River Forest.
Quint, Harold A., Major, 2444 Hartrey Ave., Evanston.
Rand, George L., Lt. Col., 2630 E. 75th St., Chicago.
Rattner, Bernard, Capt., 6500 W. Lrving Park Rd., Chicago.
Regnier, Walter O., Major, Armington.
Resnick, Carl H., Capt., 6303 W. Grand Ave., Chicago.

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Roark, Samuel P., Capt., 475 Jackson St., Bushnell.
Rubovits, Frank M. Jr., Capt., 5480 Cornell Ave., Chicago.
Ruda, Joseph M., Capt., 4140 W. 57th Pl., Chicago.
Sandberg, Kurt H., Capt., Stewardson.
Schurmeier, Frederick A., Capt., 1023 N. Spring St., Elgin.
Schwartz, Martin L., Capt., 2144 Spruce St., Murphysboro.
Scott, Dale F., Capt., 212 W. 12th St., Sterling.
Seed, Lindon, Lt. Col., 923 N. Elmwood Ave., Oak Park.
Spicer, Donald D., Major, 210 E. Wood St., Paris.
Sykora, Lawrence J., Capt., 1930 S. Highland Ave., Berwyn.
Terone, Henry M., Capt., 1734 W. 34th St., Chicago.
Thomas, Edward W., Capt., 127 Briggs St., Roodhouse.
Vertuno, John W., Capt., 1002 N. 11th Ave., Melrose Park.
Zmugg, Andrew J., Capt., 226 S. Randall Ave., Aurora.

Indiana

Bennett, Paul E., Capt., Dillsboro.
Cheney, Frederick D., Lt. Col., 5032 Graceland, Indianapolis.
Dyer, Wallace K., Major, 602 S.E. Riverside Dr., Evansville.
Elliott, Ralph A., Capt., 1514 W. 5th Ave., Gary.
Episcopo, Arsenius R., Capt., Mitchell.
Faussett, Calvin B., Major, 432 W. Maple Rd., Indianapolis.
Fitzgerald, Brice E., Lt. Col., 3020 N. Illinois St., Indianapolis.
Flora, Joseph O., Major, 4317 W. Washington St., Indianapolis.
Glock, Wayne R., Major, 921 W. Lexington Ave., Fort Wayne.
Hitch, Oliver M., 1st Lt., 310 S. Prince St., Princeton.
Koehler, Elmer G., Capt., 1304 Greenleaf Blvd., Elkhart.
Lehmberg, Otto F. C., Capt., 118 E. Van Buren, Columbia City.
Mantz, Theodore P., Capt., 3541 N. Meridian, Indianapolis.
Parker, John F., Capt., 5143 Pleasant Run Pkwy., Indianapolis.
Ramage, Walter F., Capt., 2316 N. Penn St., Indianapolis.
Sandoz, Harry H., Capt., 239 Hawthorne Dr., South Bend.
Schuknecht, Harold F., Capt., 406 Niles Ave., Mishawaka.
Torrella, Jose A., Capt., 4918 W. 14th St., Indianapolis.

Iowa

Barnes, Bernard C., Major, 4910 Pleasant St., Des Moines.
Beatty, Howard G., Capt., 1000 N. Sycamore St., Creston.
Carpenter, Ralph C., Capt., 1201 W. State, Marshalltown.
Clark, George E. Jr., Capt., 1307 42d St., Des Moines.
Fee, Charles H., Major, Denison.
Flater, Norman C., Capt., Box 83, Floyd.
Griffin, Robert E., Major, Cobb Apts, Sheldon.
Hickerson, Luther C., Capt., Brooklyn.
Hoyt, Charles N., Capt., 302½ Main St., Cedar Falls.
Limbert, E. M., Major, 431 Huntington Ave., Council Bluffs.
McGreevey, James E., 1st Lt., Iowa City.
Moehn, John T., Capt., 1522 N. Adams St., Carroll.
Morrison, John R., Major, 703 N. Court St., Carroll.
Nierling, Paul A., Capt., 721 W. 2d St., Cresco.
Rhomberg, Edward B., Capt., Guttenberg.
Richmond, Paul C., Major, New Hampton.
Schaeferle, Martin J., Capt., Osage.
Stickler, Robert B., Major, Udell.
Throckmorton, James F., Major, 1149 23d St., Des Moines.

Kansas

Epp, Frederic O., Capt., 3201 W. Douglas Ave., Wichita.
Gray, David E., Capt., 421 Huntoon St., Topeka.
Jones, Hiram P., Capt., 107 E. 8th St., Lawrence.
Minnick, Charles V., Capt., 435 W. Chestnut, Junction City.
Scuka, Clayton L., Capt., Sedgwick County Hosp., Wichita.
Sereres, Edgar P., Capt., 215 Delaware St., Hiawatha.
Speer, Louis N., Capt., 610 12th St., Osawatomie.
Stafford, George E., Capt., 800 S. 11th, Salina.
Sterling, Robert, Lt. Col., 1129 Louisiana St., Lawrence.
Vilmer, Charles E., Capt., 209 E. Monroe St., Pittsburg.

Kentucky

Boeh, Daniel H., Capt., 96 Four Mile Rd., Silver Grove.
Carrigg, Lawrence G., Major, 1341 State St., Bowling Green.
Dodson, Leslie C., Major, 2431 Allen St., Owensboro.
Flax, Moses, Capt., Paintsville.
Garred, Mathew D., Major, 820 Rogers St., Ashland.
Gettelfinger, Ralph A., Capt., 1475 Texas, Louisville.
Jackson, Vester A., Major, Clinton.
Kabaker, Charles B., Capt., 361 S. Broadway, Lexington.
Moorman, Chapman S., Capt., 800-2 Brown Bldg., Louisville.
Parker, Harold N., Major, Edgemont Rd., Maysville.
Perry, Claud W. Jr., Capt., 192 Coral Ave., Louisville.
Pigman, Alger B., Capt., Hindman.
Robertson, Robert W., Major, 2850 Broadway, Paducah.
Stites, John, Major, 2113 Village Dr., Louisville.

Kentucky—Continued

Stone, Harry J., Capt., 13th & Blackburn Ave., Ashland.
Sublett, Daniel V., Major, 743 Cooper Dr., Lexington.
Tatum, Joseph C., Major, Veterans Hosp., Lexington.
White, George A., Capt., 982 Eastern Parkway, Louisville.

Louisiana

Blitz, Oscar, Col., 2103 Gen. Taylor St., New Orleans.
Cohen, Joseph, Lt. Col., 241 Audubon Blvd., New Orleans.
Collins, Conrad G., Major, 1423 State St., New Orleans.
Eigenbrod, F. A., Major, 4503 Prytania St., New Orleans.
Gengelbach, Robert D., Capt., RFD Forest Hills, Pineville.
Genovese, Charles R., Capt., Independence.
Hendrick, John A., Capt., 4740 Fairfield Ave., Shreveport.
Hopkins, George S., Major, Lake Providence.
Lhotka, Frank M., Capt., 1619 General Pershing St.
Lieppman, Jack E., Capt., Shreveport Charity Hosp., Shreveport.
McCabe, James S., Major, Charity Hosp., New Orleans.
Moore, Jeff C. Jr., Capt., 100 Melody Dr., Metaire.
Morgan, Stanley E., Capt., 732 Pelican Ave., New Orleans.
Phillips, James R., Lt. Col., 500 Reymond Bldg., Baton Rouge.
Price, Vivian H., Major, Shreveport Charity Hosp., Shreveport.
Schudmak, Melvin A., Lt. Col., White Castle.
Thomas, George E., Major, University Hosp., University.
Tomskey, Gilbert C., Capt., 3715 Prytania St., New Orleans.
Whitfield, Frederick S., Capt., Columbia.

Maine

Donahue, Gerald H., Major, 30 Mechanic St., Presque Isle.

Maryland

Gramse, Fred R., Capt., 508 Camden Ave., Salisbury.
Lemkau, Paul V., Lt. Col., 533 N. Wolfe St., Baltimore.

Massachusetts

Abrahms, Edward T., Capt., 311 North St., Pittsfield.
Abriel, Albert G., Capt., Medford.
Allman, Sydney J., Capt., 611 River St., Mattapan.
Alpers, Nathan, Capt., 22 Summit Ave., Salem.
Amerena, John P., Capt., 54 Payson Ave., Rockland.
Appleford, George B., Capt., 549 Osgood St., North Andover.
Bachrach, Samuel, Major, 6 Moore Ave., Worcester.
Bailey, Karl R., Col., 29 Lakeville Pl., Jamaica Plains.
Bassow, Carlton F., Capt., 96 Ridge Ave., Athol.
Bond, Douglas D., Major, Harvard Med. School, Boston.
Botsford, Thomas W., Major, 721 Huntington Ave., Boston.
Broady, Harold, Capt., 53 Loring St., Lowell.
Bruce, James G., Major, 20 Maple St., Springfield.
Budnitz, Edward, Capt., 356 Salisbury St., Worcester.
Chadwell, Kenneth J., Capt., 26 Lexington Circle, Swampscott.
Creese, Philip G., 1st Lt., 93 Binney St., Boston.
Dawson, George A., 1st Lt., 16 Granite St., Methuen.
Deutsch, Emmanuel, Capt., 406 Marboro, Boston.
Donaghy, George E., Major, 175 Dartmouth St., Boston.
Dove, David, Capt., South Sudbury.
Ellas, Anthony N., Major, 98 E. Water St., Taunton.
Fisher, Robert M., Capt., 25 Esmond St., Dorchester.
Fritz, Lewis E., Capt., 34 Park St., Stoughton.
George, Alden B., Capt., 34 Commonwealth Ave., Haverhill.
Ginsberg, David, 1st Lt., 505 Armory St., Springfield.
Goldenberg, Harry, Major, 85 College Ave., Somerville.
Gundersen, Trygve, Major, 123 High St., Brookline.
Hadler, Arthur J., Capt., L. I. Hosp., Boston.
Harken, Dwight E., Lt. Col., 171 Bay State Rd., Boston.
Hays, Robert A., Capt., 115 Ellison Park, Waltham.
Hills, Henry M. Jr., Capt., 14 Autumn St., Boston.
Kane, Francis C., Capt., 7 Meadow St., Salem.
Katz, Morris E., Capt., 188 South St., Athol.
Kaufman, Moses R., Lt. Col., 253 Marsh St., Belmont.
Keleher, Paul C., Major, 48 Pleasant St., Woburn.
Kelly, Francis J., Capt., 84 June St., Worcester.
Knox, Barron D., Major, 158 N. Pleasant St., Holyoke.
Lingley, James R., Lt. Col., 115 Summit Ave., Wollaston.
Luongo, Michael A., Capt., 73 Gladstone St. E., Boston.
McClusky, Donald K., Major, 332 Main St., Worcester.
Mahoney, Alfred V., Capt., 70 Victoria Rd., Quincy.
McKittrick, John B., Capt., 125 Myrtle St., Boston.
Migliore, Joseph O., Capt., 842 Salem St., Malden.
Morrison, Jonathan I., Major, 89 Evelyn Rd., Waban (Newton).
Morse, Frank P. Jr., Major, 389 Essex St., Salem.
Nathanson, Seymour I., Capt., 134 Summer St., Fitchburg.
Parton, George P. Jr., Capt., 153 Brook St., Wellesley.
Pearson, Robert W., Capt., 15 Perkins Manor, Perkins St., Jamaica Plain.

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

Rodman, Max H., Capt., 17 Evelyn St., Mattapan.
Rosen, Daniel, Capt., 66 Columbia Rd., Roxbury.
Rottenberg, Louis A., Capt., 132 Clark Rd., Brookline.
Sapienza, Joseph A., Capt., 12 E. Haverhill, Lawrence.
Selesnick, Sydney, Lt. Col., 666 Adams St., Milton.
Shannon, Edward T., Capt., 44 Conant St., Fall River.
Short, Charles L., Major, 12 Glen Ave., Newton Center.
Sinish, Kenneth W., Capt., 63 Wentworth Rd., Melrose.
Skelton, Alton B., Major, 135 Front St., Winchenden.
Stellar, Stanley, Major, 30 Hatherly Rd., Brighton.
Stewart, Donald M., Major, 194 Clifton St., Malden.
Strachan, Harry L. Jr., Major, 260 Rimmon Ave., Springfield.
Sullivan, Thomas H., Capt., 78 Grant St., Fall River.
Taylor, Richard C., Major, South Rd., Spencer.
Thorndike, William T. S., Major, Mass. Gen. Hosp., Boston.
Van Huysen, William T., Capt., Weston.
Wolk, Eliot, Major, 795 Blue Hill Ave., Boston.
Wyman, Stanley M., Capt., 23 Fayette St., Cambridge.

Michigan

Bailey, John H., Capt., 233 E. Willis St., Detroit.
Benedict, Arthur L., Capt., 621 Maffegt St., Muskegon.
Bennett, Keith F., Lt. Col., 907 Nat'l Bank Bldg., Kalamazoo.
Bicknell, Frank B., Major, Hotel Statler, Detroit.
Binkley, Edward L. Jr., Capt., 1910 Delaware, 210, Detroit.
Childs, George M., Capt., 93 Seward, Detroit.
Clark, William E., Major, 809 E. Ash, Mason.
Conn, Harold, Capt., 7522 John R St., Detroit.
Cooper, Ralph R., Major, 418 N. Division, Ann Arbor.
Cortopassi, Vital E., Capt., 822 Sheridan Ave., Saginaw.
Croushore, James E., Major, 2045 Edison Ave., Detroit.
Curless, Grant R., Capt., 135 College St., Battle Creek.
De Groat, Albert, Lt. Col., 1551 David Whitney Bldg., Detroit.
Deresz, Alphonse R., Capt., 8040 Curt Ave., Detroit.
Dixon, Ralph C., Capt., 27 E. Willis Ave., Detroit.
Donald, Douglas, Lt. Col., 8110 St. Paul Ave., Detroit.
Drolett, Lawrence A., Capt., 228 S. Jenison, Lansing.
Ellis, Calvin C., Major, 1356 Delaware St., Detroit.
Ellis, Seth W., Major, 2516 Longfellow Ave., Detroit.
Failing, John F., Capt., 2617 Lake Michigan Dr., Grand Rapids.
Farrior, Joseph B., Major, University Hosp., Ann Arbor.
Flick, Earl J., Capt., 611 N. Center, Royal Oak.
Forsythe, John R., Major, 20526 Grand River Ave., Detroit.
Fyvie, James H., Major, 210 Range St., Manistique.
Gibson, Thomas E., Major, 1218 Cawood St., Lansing.
Gutow, Benjamin R., Major, 3404 Longfellow Ave., Detroit.
Gutow, Julius J., Capt., 5623½ S. Saginaw, Flint.
Hall, George C., Major, 121 N. Scott, Adrian.
Hanson, Frederick N., Major, Box 57, Elise.
Hasty, Willis A., Capt., Gobles.
Heidenreich, John R., Major, Daggett.
Herbert, Walter N., Capt., 207 S. Main St., Yale.
Hoekman, Aben, Capt., 460 Prospect, Constantine.
Ivkovich, Paul, Major, 447 W. Upton Ave., Reed City.
Jameson, F. M., Capt., 145 Woodward Lane S.E., Grand Rapids.
Kaplita, Walter A., Capt., 5087 Caniff Ave., Detroit.
Klerk, William J., Capt., 708 Homecrest, Kalamazoo.
Knobloch, Howard T., Capt., 221 N. Lincoln, Bay City.
Kolb, Frederick E., Capt., Lake Linden.
Koon, William D., Capt., Butterworth Hosp., Grand Rapids.
Koss, Frank R., Capt., 136 S. Waverly, Dearborn.
Krass, Edward W., Lt. Col., 11088 Gratiot Ave., Detroit.
Lemire, Donald F., Capt., Hurley Hosp., Flint.
Lewis, J. Hugh, Lt. Col., 214 Superior Blvd., Wyandotte.
Lowe, Stanley T., Capt., RFD 2, Box 60, Battle Creek.
McGlaughlin, Nicholas D., Capt., 2062 22d St., Wyandotte.
Mark, Jerome, Capt., 3295 Glendale, Detroit.
Marrin, M. M. Jr., Lt. Col., 2291 Marywood, Grand Rapids.
Miller, Edwin C., Major, 812 N. Grant St., Bay City.
Miller, Phillip L., Capt., 1706 John St., Muskegon.
Moleski, Leo T., Capt., Oakwood Manor, Grand Rapids.
Moore, Donald F., Major, Box A, Ypsilanti.
Moore, Neal R., Capt., 2140 5th Ave., Bay City.
Palmer, Alger A., Capt., 110 Middle St., Chelsea.
Pelletier, Charles J., Capt., 20057 Keating Ave., Detroit.
Pfeffer, Isadore S., Capt., Wm. J. Seymour Hosp., Eloise.
Pleune, Russell E., Capt., 219 Blanche St., Houghton.
Schrier, Christian F., Capt., 109 Chippewa St., Pontiac.
Schrier, Thomas, Capt., 3313 Price Ave., Comstock.
Scovill, Henry A., Major, 125 Ellen St., Union City.
Scully, Raymond E., Capt., 2011 Francis St. S.E., Grand Rapids.
Sheldon, John M., Lt. Col., University Hosp., Ann Arbor.
Showalter, Lawrence E., Major, 611 E. Division, Cadillac.
Snyder, Leopold J., Capt., 45 Farrand Park, Detroit.

Michigan—Continued

Sparling, Harold I., Capt., 251 E. Main St., Northville.
Spencer, Lloyd H., Major, Detroit.
Steinhardt, Milton J., Capt., 19135 Sorrento, Detroit.
Stocker, Lawrence L., Capt., 3044 Tuxedo, Detroit.
Szejda, John C., Capt., 3001 Harper Ave., Detroit.
Teitelbaum, Myer, Capt., 18621 Mendota Ave., Detroit.
Tesseine, A. J., Capt., 2325 Madison Ave. S.E., Grand Rapids.
Van Ark, Herman F., Capt., 1927 Belden Ave., Grand Rapids.
Wachs, Leonard V., Capt., Hotel Tuller, Detroit.
Wagenaar, Edward H., Major, Portage.
Wallace, W. S., Capt., Highland Pk. Gen. Hosp., Highland Park.
Wiener, Israel, Capt., 2901 W. Philadelphia, Detroit.
Wilson, Walter J. Jr., Capt., Grosse Pointe.
Windrow, Frank M., Lt. Col., University Hospital, Ann Arbor.
Zawadzki, Edward S., Capt., 5939 Moran Ave., Detroit.
Zimont, Raymond D., Capt., 135 E. 2d St., Constantine.

Minnesota

Balmer, Albert I., Capt., 714 4th Ave. S.W., Pipestone.
Blake, James A., Capt., 49 10th Ave. S., Hopkins.
Bodaski, Albert A., Capt., 204 Main St., Montgomery.
Brooke, James W., Major, Lancaster.
Brownson, Bradley C., Major, Mayo Clinic, Rochester.
Burnham, Wesley H., Major, 607 E. 14th St., Minneapolis.
Cain, James C., Lt. Col., % Mayo Foundation, Rochester.
Campbell, Joseph R., Major, Rochester State Hosp., Rochester.
Canfield, Wayne W., 1st Lt., Houston.
Forsythe, James R., 1st Lt., 1095 Osceola Ave., St. Paul.
Friedman, Harry S., Capt., 1617 11th Ave. S., Minneapolis.
Garrow, Douglas M., Major, 1315 Goodrich Ave., St. Paul.
Guilfoile, Pierre J., Capt., Delano.
Haes, Julius E., Major, Vernon Center.
Harper, Harry P., Lt. Col., Mayo Foundation, Rochester.
Hullisiek, Richard B., Lt. Col., St. Paul.
Jackson, Hunter S., 1st Lt., 512 S.W. 4th St., Rochester.
Klotz, Maurice, Capt., U. S. Veterans Hosp., St. Cloud.
Larson, Ralph H., Capt., Tenney.
Lindblom, Alton E., Major, 4344 Lyndale S., Minneapolis.
Noble, John L., Major, 1091 Hyancinth St., St. Paul.
Odessky, Louis, Capt., 971 Goodrich Ave., St. Paul.
Owens, William A., Major, Montevideo.
Parson, Edwin I., Capt., 815 Fidelity Bldg., Duluth.
Ponterio, James E., Capt., 225 E. 5th St., Shakopee.
Rizer, Dean K., Major, 1916 Fremont Ave. S., Minneapolis.
Rosenthal, Frank H., Capt., Grand Meadow.
Ruggles, George M., Major, Forest Lake.
Sandt, Karl E., Major, 1123 Kenwood Parkway, Minneapolis.
Sealy, William B., Major, 1131 2d St. N.W., Rochester.
Seljeskog, Sigsbee R., Major, 2708 E. Lake St., Minneapolis.
Sperling, Louis, Major, 2917 Sunset Blvd., Minneapolis.
Stewart, Donald E., Major, Binet Block, Grand Rapids.
Subby, Walter, Capt., 1916½ 4th Ave. E., Hibbing.
Sullivan, Ralph R., Lt. Col., 3436 47th Ave. S., Minneapolis.
Tillisch, Jan H., Major, 102-110 2d Ave., Rochester.
Winquist, Carl G., Major, Crosby.

Mississippi

Jenkins, William N., Lt. Col., Fort Gibson.
Scott, Jack H., Capt., Kosciusko.

Missouri

Adams, Ralph W., Major, Richland.
Allee, James W., Major, Eldon.
Anschuetz, Robert R., Capt., 311 E. 69th Terrace, Kansas City.
Bishop, Marion D., Capt., % City Hosp., St. Louis.
Bowser, John F., Major, 3706 Wyoming, Kansas City.
Bunting, Williston P., Major, K. C. Gen. Hosp., Kansas City.
Chambers, James Q. Jr., Major, 1103 Grand Ave., Kansas City.
Dimond, Edgar A., Major, Lamar.
Dixon, John R., Major, Linneus.
Duncan, William H., Major, 7200 Belle Fountaine, Kansas City.
Edwards, Joseph C., Major, 27 Washington Terrace, St. Louis.
Eubank, William R., Major, 1404 Bryant Bldg., Kansas City.
Hibbert, R. W. Jr., Lt. Col., 7724 W. Biltmore Ave., St. Louis.
Hill, Jack H., Capt., 118 E. 43d St., Kansas City.
Hoffmann, Augustin D., 1st Lt., 4522 Clarence Ave., St. Louis.
Howell, Hickman C., 1st Lt., 812 S. Hampton, Springfield.
Johnston, Andrew D., Capt., Osceola.
Jones, Paul L., Capt., Flat River.
Lohr, Curtis H., Col., 501 N. Brentwood Blvd., Clayton.
Lonergan, Warren M., Major, Barnes Hosp., St. Louis.
Mellies, Chester J., Lt. Col., Mo. State Sanatorium, Mt. Vernon.
Mullen, Leo M., 1st Lt., St. Joseph's Hosp., Kansas City.
Pickett, Frank J., Capt., 528 Sergeant Ave., Joplin.

PHYSICIANS SEPARATED FROM SERVICE

Missouri—Continued

Shapiro, Hyman D., Capt., Missouri Pacific Hosp., St. Louis.
Stuart, Daniel D., Capt., Brunswick.
Tapper, Stephen M., Capt., 7541 Hiawatha, Richmond Heights.
Wilucki, Melvin R., Major, 5936 Arendes Dr., St. Louis.

Montana

Davidson, John G., Capt., 616 W. Mercury St., Butte.
Dismore, Albert B., Major, Troy.
Stephan, Lewis B., Capt., 438 Brooks St., Missoula.

Nebraska

Bozarth, Elton P., Major, Humboldt.
Brott, Clarence R., Capt., RFD 1, Jansen.
Crook, Guy H., Capt., 2305 Towle St., Falls City.
Proffitt, Jonas A., Capt., 910 Hastings Ave., Hastings.
Rider, Larry D., Capt., 2425 South St., Lincoln.

Nevada

Poulson, Fred M., Capt., % Frank Arracada, Elka.

New Hampshire

Charest, Leandre R., Capt., 402 Wilson St., Manchester.
Danais, Edouard M., Capt., 237 Bell St., Manchester.
Dudley, Frank G., Capt., Rumney.
Gagnon, Louis P., Capt., 418 Notre Dame Ave., Manchester.
Perrault, Gerard R., Capt., 5 Zellwood St., Nashua.
Perrin, Harry W., Capt., 26 School St., Lisbon.
Webster, David K., Major, 38 Auburn St., Concord.

New Jersey

Bassett, Samuel F., Capt., Englewood Hosp., Englewood.
Benz, Francis J., Capt., 84 Fairmount Ave., Chatham.
Bergmann, Ewald H., Capt., 44 Bank St., Sussex.
Dardess, John, Capt., Chatham.
Goldstein, Joseph D., Major, 2801 Boulevard, Jersey City.
Hancock, Michael Q., Major, 705 D St., Belmar.
Insabella, John, Capt., 37 Oakland Terrace, Newark.
Kandra, Paul H., 1st Lt., 76 Washington Ave., Plainfield.
Kroll, Rolf, Major, 930 Kensington Ave., Plainfield.
Leonard, Isaac E., Capt., 8 N. Swarthmore Ave., Ventnor.
Magill, Marcus, Capt., 4116 Ventnor Ave., Atlantic City.
Milligan, Paul R., Capt., 179-181 Lincoln Ave., Orange.
Perham, Bertram S., Capt., 100 Lorraine Ave., Upper Montclair.
Pignataro, Frank P., Lt. Col., N. J. State Hosp., Marlboro.
Rosenthal, Arthur D., Capt., Vet. Admin. Facility, Lyons.
Rosner, E. Capt., 213 N. Vineyard Blvd., Collingswood, Camden.
Schneider, Clinton R., Major, Cedar St., Tuckerton.
Schneider, Harry J., Capt., 36 Rockwell Ave., Long Branch.
Schweizer, Roman G., Capt., 36 Summit Rd., Elizabeth.
Smith, Benjamin E., Capt., 12 Kensington Ave., Trenton.
Snedecor, Spencor T., Major, 288 Maple Hill Dr., Hackensack.
Sokoloff, Oscar J., Capt., 67 Paterson St., New Brunswick.
White, Thomas J., Lt. Col., 221 Union St., Jersey City.
Winn, Samuel L., Major, 15 S. Knight Ave., Margate City.
Ziccardi, Anthony V., 1st Lt., 210 W. Main St., Maple Shade.

New Mexico

Gwinn, Allen C., Major, 701 N. Canal, Carlsbad.
Speed, Henry K. Jr., Major, 1300 N. Wallace St., Clovis.

New York

Alford, Kenneth M., Major, 134 Lancaster Ave., Buffalo.
Antine, Leon J., Capt., 245 E. 178th St., New York.
Barnett, Theodore, Major, 220 E. 18th St., Brooklyn.
Black, Abraham, Major, 8608 Forest Parkway, Woodhaven.
Black, Asher, Capt., 1105 Cogswell Ave., Solvay.
Blinkoff, Jack J., Capt., 432 Montauk Ave., Brooklyn.
Brown, Roswell K., Lt. Col., 596 Delaware Ave., Buffalo.
Brundage, Donald W., Capt., 214 S. Indiana Ave., Watertown.
Burger, Harold, Major, 2928 Jerome Ave., Bronx.
Butterworth, Julian S., Major, 865 1st Ave., New York.
Calabrese, Savin D., Capt., 89-11 63d Dr., Forest Hills, L. I.
Conant, Ralph E., Major, 83-15 116th St., Kew Gardens.
Craig, John D., Major, 108 E. 68th St., New York.
Crawford, George, Capt., 455 W. 23d St., New York.
Diamondstone, David, Capt., 48-54 205th St., Bayside, L. I.
Doherty, Edward J., Capt., 97th Ave., Ozone Park.
Dollinger, Joseph, Capt., 2028 Mermaid Ave., Brooklyn.
Duncan, William R., Major, 17 5th Ave. N., Pelham.
Ellis, Wade B., Major, 37 Bidwell Parkway, Buffalo.
Elsaesser, Arthur G., Major, 2003 Bailey Ave., Buffalo.
Enright, Charles T., Capt., 352 E. 141st St., Bronx.
Epstein, Isidore L., Capt., 215-02 39th Ave., Bayside, L. I.

New York—Continued

Erdman, Albert J. Jr., Capt., 483 W. End Ave., New York.
Feltenstein, Milton D., Capt., 60 Gramercy Park N., New York.
Ferrari, Alfred J., Capt., 114 Homer Ave., Buffalo.
Fierst, Sidney M., Capt., 1138 E. 9th St., Brooklyn.
Fink, Seymour A., Capt., 79 Lewis St., New York.
Fulsom, Elroy L., Capt., 2844 Main St., Buffalo.
Furman, Martin A., Major, 3875 Waldo Ave., Bronx.
Gordinier, Hermon C., Lt. Col., 89 4th St., Troy.
Graubard, David J., Lt. Col., 175 Riverside Dr., New York.
Greenier, Harold J., Capt., Box 162, Orangeburg.
Habif, David V., Capt., 790 Grand Concourse, N. Y.
Harbater, Melvin I., Capt., 98-500 67th, Forest Hills, L. I.
Harris, William L., Capt., 698 W. End Ave., New York.
Hatz, Bernard, Major, 226 Oakwood Ave., Cedarhurst.
Henze, Carlo, Capt., 485 Pelham Rd., New Rochelle.
Hersh, Joseph H., Major, 255 Eastern Parkway, Brooklyn.
Hoffman, Harry, Capt., 217 High St., Monroe.
Horowitz, Albert W., Capt., 1555 56th St., Brooklyn.
Hunter, Arthur F., Major, 1 Haven Ave., New York.
Irons, Harry S. Jr., Capt., Strong Memorial Hosp., Rochester.
Jackson, William O., Col., Avoca.
Kaskiw, Eugene A., Capt., 465 84th St., Brooklyn.
Kizun, Michael, Capt., Fultonville.
Levy, Milton H., Capt., 152 E. 94th St., New York.
McCollom, Robert L., Major, 115 E. 61st St., New York.
McEachren, John N., Capt., 70 S. Main St., Fairport.
Malins, Maurice L., Capt., 242 W. 76th St., New York.
Mann, Herbert, Capt., 1114 Ocean Ave., Brooklyn.
Marks, Stuart H. B., Capt., 1115 Euclid Ave., Syracuse.
Maxwell, Edmund, Capt., 409 State St., Carthage.
Mayer, David E., Col., 169 E. 78th St., New York.
Miller, Myron J., Capt., 333 Central Park West, New York.
Minerva, Frank D., Major, 19 Van Buren St., Brooklyn.
Morawski, John S., Capt., 36 Broone St., Brooklyn.
Morrow, Albia R., Major, 15 Albany St., Cazenovia.
Paley, Isaac M., Capt., 73 Lexington Ave., New York.
Palmer, James P., Major, 429 Parker Ave., Buffalo.
Park, Charles L., Capt., St. John's Riverside Hosp., Yonkers.
Parker, David S. Jr., Major, 260 Crittenden Blvd., Rochester.
Parker, Merrill O., Major, 10 Grover St., Auburn.
Plotz, Harry, Col., 671 E. 17th St., Brooklyn.
Plummer, Norman, Major, 331 E. 71st St., New York.
Pollack, Abou D., Major, The Mount Sinai Hosp., New York.
Rabiner, Nathan M., 1st Lt., 455 Scheectady Ave., Brooklyn.
Read, Paul M., Major, 34-24 87th St., Jackson Heights, L. I.
Russow, Erich H., Capt., 71-18 69th Pl., Brooklyn.
Sandusky, William R., Major, 4 Ridgeview Ave., White Plains.
Sarles, Marvin, Capt., 3235 Bailey Ave., Buffalo.
Sarot, Irving A., Major, 21-05 41st Ave., Long Island City.
Sarrel, Morris, Capt., 527 Humboldt St., Brooklyn.
Share, William L., Major, 312 DeForest Rd., Syracuse.
Shine, L. B., Major, E. 141st St., % Lincoln Hosp., New York.
Singer, Frederick, 1st Lt., 39 Morris St., Yonkers.
Singerman, Leon, Capt., 90-15 Grenfell Ave., Kew Gardens, L. I.
Skura, George, Capt., 1212 Ocean Ave., Brooklyn.
Small, Bernard L., Major, 10 Sunset Rd., Lawrence, L. I.
Tarasuk, Irving A., Capt., 1900 Quentin Rd., Brooklyn.
Tartikoff, George, Capt., 1565 47th St., Brooklyn.
Tausig, Daniel P., Capt., 173 Riverside Dr., New York.
Tedesco, Joseph, Major, Arcade.
Teich, S., Capt., 1090 N. Y. Ave., Huntington Sta., New York.
Teitelbaum. David B., Major, 395 Riverside Dr., New York.
Tieman, Lorne S., Capt., Otisville.
Tulloch, Donald C., Major, 623 Ford St., Ogdensburg.
Tyson, Terence L., Major, 1 Gracie Square, New York.
Ullman, Montague, Capt., 116 Rutledge St., Brooklyn.
Ungar, Stanley F., Lt. Col., 365 W. End Ave., New York.
Vogel, Benjamin F., Major, 450 E. 141st St., New York.
Voltz, Charles P., Capt., 841 Niagara St., Buffalo.
Wahl, Albert L., Capt., Mt. Vision P. O. Box 43, Otsego County.
Waltzer, Max, 1st Lt., 2928 Jerome Ave., Bronx.
Weeden, Willis M., Lt. Col., City Hospital, New York.
Weinreb, Henry, Capt., 15 Dosoris Lane, Glen Cove.
Weisman, Donald J., Capt., 250 Knollwood Rd., White Plains.
Weisselberger, David, 1st Lt., 4871 Broadway, New York.
Wellens, Stanley L., Capt., 429 Beach 47th St., Edgemer, L. I.
Wentworth, Edward T., Col., 35 Chestnut St., Rochester.
White, Robert R., Capt., 1163 East Ave., Rochester.
Wilbur, Daniel W. III, Capt., Morrisania City Hosp., Bronx.
Wilcox, Herbert B. Jr., Major, 10 E. 90th St., New York.
Work, Henry H. Jr., 1st Lt., 155 Hughes Ave., Buffalo.
Zimmerman, Joseph, Capt., 681 Clarkson Ave., Brooklyn.
Zumpano, Joseph C., Capt., 3064 Bailey Ave., New York.

PHYSICIANS SEPARATED FROM SERVICE

North Carolina

Burgess, Woodrow W., Major, Duke Hosp., Durham.
Curtzwiler, Francis C., Lt. Col., Hydrangea Pl., Wilmington.
Griffis, John W., Capt., Denton.
Harney, James N., Capt., 601 Colonial Dr., High Point.
Johnson, Gaston F., Capt., 4 Chestnut St., Spray.
Ketchie, James M., Capt., Salisbury.
Robinson, Robert L., Major, Mars Hill.
Smith, John G., Capt., 1430 W. Thomas St., Rocky Mount.
Spencer, Thomas B., Capt., 1718 Queens Rd., Charlotte.
Straughan, John W., Capt., Warsaw.
Thurston, Thomas G., Capt., 418 Tarboro St., Rocky Mount.
Tilton, Welcome B., Capt., 83 Brevard Rd., West Asheville.
Wilson, James S., Capt., Kenansville.
Wisely, Martin R., Major, Edenton.

North Dakota

Gibson, Francis D. Jr., Capt., W. Main St., Gibson.
Peterson, Albert M., 1st Lt., Sawyer.
Reichert, Donald J., Capt., 46 4th St. W., Dickinson.
Saxvik, Russell O., Capt., 622 8th St., Bismarck.
Stennes, John L., Capt., Harwood.
Stevens, Joseph B., Lt. Col., 115 W. Avondale Rd., Greensboro.

Ohio

Bell, Joseph J., Major, 608 McAlpin Ave., Cincinnati.
Cannava, Andrew W., Capt., 2916 Woodburn Ave., Cincinnati.
Cooley, John B., Capt., 112 S. Kensington Pl., Springfield.
Doran, Joseph K., Capt., Lakeside Hosp., Cleveland.
Eichhorn, John P., Major, City Hosp., Cleveland.
Ellery, James A., 1st Lt., 29 Blvd., Shelby.
Elsey, Edward C., Lt. Col., 365 Howell Ave., Cincinnati.
Ensign, Paul R., Col., 3332 River Rd., Toledo.
Extejt, Andrew J., Capt., 1102 Eversham St., Toledo.
Frankmann, Raymond W., Capt., 1007 11th St. N.E., Massillon.
Friedman, David L., Capt., 105 17th St., Toledo.
Frye, Carl M., Capt., 304 Mount Vernon Rd., Newark.
Gillen, John L., Major, 1027 17th St. N.W., Canton.
Golden, Alfred, Major, 509 Crosby St., Akron.
Gregg, Walter K., Lt. Col., 906 Nordale, Dayton.
Holmes, Nicholas H., Capt., 59 W. Main St., Chillicothe.
James, Dorrance S., Major, 24 W. William St., Delaware.
Kamesis, John J., Capt., 618 E. 107th St., Cleveland.
King, George L. Jr., Lt. Col., 537 E. Market St., Alliance.
Knies, Phillip T., Lt. Col., 129 N. Columbia St., Columbus.
Kuehn, Adelbert J. G., Major, 2318 Monroe St., Toledo.
Lefkowitz, H. J., Capt., 3336 Maynard Rd., Shaker Heights.
Lieberman, Harry G., Capt., 849 Bell St., Akron.
Maczuga, John A., Capt., 3349 Cherry St., Toledo.
Meltzer, Jack, Major, 740 E. 90th St., Cleveland.
Miles, Robert K., Capt., Box 386, Thompson.
Moore, Frank T., Lt. Col., R. D. 2, Cuyahoga Falls.
Morgan, James E., Capt., 13501 Eucild Ave., E. Cleveland.
Neff, Garnet E., Capt., 3033 N. Hill Rd., Portsmouth.
Pater, Joseph L., Capt., 418 Millikin St., Hamilton.
Piranino, Anthony F., Capt., 214 Oak St., Oberlin.
Press, Sanford, Capt., 120 Brady Circle, Steubenville.
Rehm, Ernest D., Capt., 1031 Vance St., Toledo.
Roenigk, Henry H., Capt., Cleveland.
Rohrbaugh, John R., Capt., 308 1st Nat'l Bank, Massillon.
Rossmiller, Harold R., Major, 1928 E. 90th St., Cleveland.
Rundell, Karl D., Major, University Hosp., Cleveland.
Sachs, Leonard Z., Capt., 12434 Phillips Ave., Cleveland.
Sancetta, Salvatore M., Capt., Cleveland City Hosp., Cleveland.
Schneider, Louis W., Capt., 35 Millville Ave., Hamilton.
Schroer, William A., Capt., Fort Loramie.
Schumacher, Edward R., Major, 303 E. Beck St., Columbus.
Schweitzer, Julius P. Jr., Capt., 15415 Lake Ave., Lakewood.
Scott, John M., Major, 223 17th St. N.W., Canton.
Shagrin, Arthur, Capt., 1720 Middlehurst, Cleveland Heights.
Shepard, Joseph H., Capt., 2428 Dale Ave., Columbus.
Shilling, Harry E., Capt., 120 S. Oxford St., Troy.
Stelzner, Glenn W., Capt., 204 W. Church St., Newcomerstown.
Stokien, Ernest D., 1st Lt., 1074 E. 99th St., Cleveland.
Stout, Walter M., Capt., 128 W. Lane Ave., Columbus.
Ternocky, Frank, Capt., Bloomville.
Tice, Raymond S., Major, City Hosp., Akron.
Trostel, William W., Major, 1271 Park Ave., Piqua.
Vokoun, Frank J., Major, 17881 Lake Ave., Clifton Park.
Wagner, Gordon T., Capt., 1833 Grasmer Rd., Cleveland.
Whitacre, Daniel J., Major, 1550 Melrose Ave., Columbus.
Wilcox, John M. III, Capt., 11118 Cliftons Bend, Cleveland.
Yurick, Edward A., Major, 15520 Fernway Ave., Cleveland.

Oklahoma

Bedford, D. R., Capt., University Hosp., Oklahoma City.
Bergener, Karl L., Major, 1328 S. Quincy, Tulsa.
Bigler, Ivan E., Capt., 110 E. 12th St., Ada.
Dodson, George E., Capt., 424 S. 13th St., Muskogee.
Ensey, James E., Lt. Col., Altus.
Johnston, Leonidas A., Major, 907 N. Bullitt St., Holdenville.
Kroovand, W. H., Capt., St. Anthony Hosp., Oklahoma City.
Stoner, Raymond W., Capt., Box 128, Checotah.
Tracy, Gilbert W., Capt., Erick.
Turnbow, William R., Capt., 2112 W. 41st St., Tulsa.
Wolfe, Ira C., Major, 1601 Hayes St., Muskogee.
Woodburn, Joel T., Capt., 911 Court St., Muskogee.

Oregon

Anderson, Earl M., Lt. Col., 3235 N. E. Ainsworth, Portland.
Begg, Roderick E., Lt. Col., 1106 S.W. Dibbs St., Portland.
Codd, Joseph I., Capt., 412 E. 7th St., Tillamook.
Dinsmore, James F., Capt., Canby.
Moore, Donald E., Major, 243 S. Holly St., Medford.
Parcher, Russell W., Capt., 2447 N.W. Westover Rd., Portland.
Pollock, Robert W., Capt., Halfway.
Rawls, Noel B., Capt., Emanuel Hosp., Portland.
Saunders, George C., Major, 401 Med. Arts Bldg., Portland.
Schlegel, Henry E. Jr., Capt., 2537 N.E. 48th Ave., Portland.
Shields, A. B., Capt., 1526 S.E. Hawthorne Ave., Portland.
Smith, Gordon K., Col., Route 8, Box 135, Portland.
Yost, Charles W., Major, 2710 N. E. 57th Ave., Portland.

Pennsylvania

Atkins, John L., Major, 59 E. Broadway, Red Lio, York Co.
Baczkowski, William C., Capt., 94 S. 18th St., Pittsburgh.
Balin, Joseph A., Capt., 2217 E. Cumberland St., Philadelphia.
Bonafede, Peter L., Capt., 4014 Jonestown Rd., Colonial Park.
Bone, Charles A. Jr., Capt., 105 N. Easton Rd., Glenside.
Borow, Sydney, Capt., 3400 St. Vincent St., Philadelphia.
Cameron, Donal Y., Major, 700 Osage Dr., Pittsburgh.
Carson, W. B. Jr., Lt. Col., RD 9, S. Hills Branch, Pittsburgh.
Deehan, Sylvester J. II, Capt., 843 N. 24th St., Philadelphia.
DeVittorio, Armond A., Capt., 35 W. Cardott St., Ridgway.
Eisner, Abraham G., Major, 841 Jefferson Ave., Scranton.
Fake, Warren H., Capt., 30 W. Main St., Ephrata.
Geeseman, George R., Major, 502 Hutchinson Ave., Canonsburg.
Gelfand, David, Major, 718 Pine St., Philadelphia.
Geller, Joseph, Capt., 1915 E. Allegheny Ave., Philadelphia.
Hession, Henry M., Capt., 1131 S. 53d St., Philadelphia.
Horst, Elmer L., Capt., Veterans Adm., Coatesville.
Hull, Logan B., Capt., 1320 21st Ave., Altoona.
Johnson, David O., Capt., 507 Swarthmore Ave., Ridley Park.
Knox, John J., Capt., 26 York St., Gettysburg.
Landay, Louis H., Major, 5048 Jenkins Arcade, Pittsburgh.
Leigh, Corland D., Capt., 36 Rocklyn Pl., Pittsburgh.
McClintock, J. L., Major, 30 W. Penn Germantown, Philadel.
McGehee, Paul D. Jr., Capt., Doctor's Home, Philadelphia.
Moser, Christian E., Capt., Arch St., Spring City.
Muldawer, Milton E., Capt., 5314 Gainor Rd., Philadelphia.
Narkiewicz, Pius A., Capt., 437 Sunbury St., Minersville.
Noecker, John M., Major, 425 Arthur Ave., Scranton.
Ort, William F., Capt., 37 S. 3d St., Quakertown.
Parish, B. D. Jr., Capt., 957 Bethlehem Pike, Chestnut Hill.
Phillips, David J., Capt., 69 E. Wister St., Germantown, Phila.
Raker, Ned T., Major, 336 S. Juniper St., Philadelphia.
Reese, Evan C., Major, 285 Prospect St., East Stroudsburg.
Rilling, Carl A., Capt., 6071 Frankford Ave., Philadelphia.
Rosenbloom, Meyer A., Capt., 707 E. Ohio St. N.S., Pittsburgh.
Rosenthal, Stephen I., Capt., 720 N. Webster Ave., Scranton.
Seip, Walter R., Capt., 6962 Reynolds St., Pittsburgh.
Seltzer, Maurice, Major, 2020 Rhawn St., Philadelphia.
Skinner, William F., Major, 324 Spring Garden St., Easton.
Smith, James F., Capt., 405 E. Market St., Clearfield.
Smith, William K., 1st Lt., 120 DeSota St., Pittsburgh.
Taylor, Morgan F., Capt., Hop Bottom, Susquehanna City.
Terlizzi, Carmelo L., Major, 39 N. 3d St., Duquesne.
Thomas, Alvin V., 1st Lt., 2426 W. Norris St., Philadelphia.
Thompson, Wesley D. Jr., Lt. Col., Avon Rd., Haverford.
Tucker, J. M., Capt., 216 Nippon St., Mt. Airy, Philadelphia.
Turnoff, David, Capt., 5900 Castor Ave., Philadelphia.
Walsh, Martin J., Capt., 54 William St., Pittston.
Ward, Frederick W., Capt., 1119 Ferry St., Easton.
Weber, Charles L., Capt., 1143 5th Ave. E., McKeesport.
Weiss, William A., Capt., 93 Hanover St., Wilkes-Barre.
Welch, John T. G., Capt., Lancaster.
Wiener, Jacob S., Capt., 2408 S. 5th St., Philadelphia.

PHYSICIANS SEPARATED FROM SERVICE

Rhode Island

Arciero, Michael, Major, 225 Admiral St., Providence.
Healey, James P., Lt. Col., 71 Earle St., Central Falls.
McVay, John F., 1st Lt., 56 Maynard St., Pawtucket.
Seltzer, Benjamin, Capt., 300 Pontiac Ave., Cranston.
Serbst, Charles A., Capt., 40 Byfield St., Bristol.
Sinclair, Edmond B., Major, 176 Evergreen St., Providence.
Wells, Guy W., Col., 124 Waterman St., Providence.

South Carolina

Alston, William C. Jr., Capt., 119 W. Creswell, Greenwood.
Barron, William T., Lt. Col., 1501 Tanglewood Rd., Columbia.
Brunson, Joseph W., Major, Mill St., Camden.
Epps, George L., Lt. Col., Newberry.
Herbert, W. C. Jr., Major, 143 Wofford Campus, Spartanburg.
McCutchen, George T., Lt. Col., Valley Rd., Columbia.
Rainey, John F., Capt., Anderson.
Richard, Dalbert J., Major, Vet. Admin. Facility, Columbia.
Rubinowitz, Abraham M., Capt., Beaufort.
Stith, Robert B. Jr., Capt., 105 W. Cheves St., Florence.
Taylor, Thomas J., Lt. Col., 1605 Heyward St., Columbia.
Topp, Olfert W., Capt., 715 N. Main St., Greenville.
Wertz, John A., Major, Box 115, Estill.

South Dakota

Catey, Robert M., Capt., 603 2d Ave., West Mobridge.
Dahlin, David C. Jr., Capt., Centerville.
Duimstra, Fred, Capt., 1235 W. 22d St., Sioux Falls.
Hill, Willard H., Capt., 244 Centerville.
Nyquist, Roy H., Capt., Iroquois.
Stewart, Marvin J., Capt., 1627 Davenport St., Sturgis.

Tennessee

Boykin, James T., Major, Lewisburg.
Bratley, Forrest G., Major, 810 Mt. Vernon Circle, Chattanooga.
Chandler, John H., Major, 706 S. Mansfield, Memphis.
Hayes, James T., Capt., Madison.
Hollabaugh, Charles F., Major, Shackleford Rd., Nashville.
Robinson, Elisha M., Lt. Col., Sheppard Pl., Nashville.
Scott, James A., Capt., St. Thomas Hosp., Nashville.
Stewart, Marcus J., Lt. Col., Campbell's Clinic, Memphis.
Turley, John C., Capt., 626 Center Dr., Memphis.
White, Bart N., Capt., 506 N. Main St., Murfreesboro.

Texas

Adamson, William B., Lt. Col., 2341 S. 10th, Abilene.
Althaus, John W. A., Major, 1305 Presidio, Fort Worth.
Andrus, Bailey C., Capt., 421 Harvard St., Houston.
Brewster, Clarence B., Lt. Col., 1012 W. Belknap St., Ft. Worth.
Coleman, Jesse L., Capt., Box 14, Sanatorium.
Daniell, Alfred H., Capt., Brownfield.
Dye, Everette L. Jr., Capt., 411 Beech St., Plainview.
Fayle, Percy R., Capt., Jefferson Davis Hosp., Houston.
Garre, Peter R., Capt., 1224 Crockett, Amarillo.
Katz, Sol, Major, 4101 Prescott, Dallas.
Leaton, Robert E., Capt., 744 N. Anglin St., Cleburne.
Moore, R. M., Lt. Col., U. of Texas, Sch. of Med., Galveston.
Quinn, Clarence F., Major, 218 12th Ave., N. Texas City.
Reeser, Wayne, 1st Lt., 1301 Broadway, Lubbock.
Robertson, Adolph H., Capt., Miles.
Robinett, James B. Jr., Major, 1502 Med. Arts Bldg., Houston.
Sadler, Charles B., Capt., Box 33, Brookshire.
Shane, Hugh, Capt., 801 E. Houston St., Marshall.
Solis, Gume R., Capt., 717 W. Highway, Mercedes.
Suehs, Oliver W., Major, 600 Bellevue Pl., Austin.
Taylor, Otis Jr., 1st Lt., 2706 24th St., Lubbock.
Taylor, Surse J. Jr., Capt., McKinney.
Tenney, Samuel W., Capt., 203½ N. Washington, Marshall.
Tipton, George W., Capt., Marshall Ford Dam.
Todd, David A., Lt. Col., 305 Thelma Dr., San Antonio.
Wagner, Gerald W., Lt. Col., 815 Denver St., Plainview.
Wheeler, Howard P., Capt., Georgetown.
White, James N., Capt., 430 N. Getty St., Uvalde.
Withers, B. T. Jr., Major, 238 W. Beauregard Ave., San Angelo.
Wolfe, Alfred S., Major, 804 Laylon Ave., Henderson.

Utah

Cleary, James A., Major, 458 B St., Salt Lake City.
Cottam, Alma H., Capt., 310 S. 13th St. E., Salt Lake City.
Fennemore, Stanford W., Capt., Price.
Rees, Gordon S., Major, Gunnison.

Vermont

Audette, Paul J., 1st Lt., 50 S. Willard St., Burlington.
Avery, Roscoe E., Major, 74 Summer St., Barre.

Vermont—Continued

McCrea, John H., Capt., 33 E. Allen St., Winooski.
Newcombe, Richard V., Major, 98 N. Prospect St., Burlington.
Pisanelli, Victor J., Capt., 56 Strong Ave., Rutland.
Poczabut, John S. Jr., Capt., 1 Main St., Florence.
Powell, Platt R., Capt., Milton.
Rath, Walter H., Major, St. Albans.
Rawson, Burnett S., Major, North Williston.
Seltzer, Leo M., Capt., 148 Hill St., St. Barre.
Simonds, John R., Capt., Burlington.
Soule, Arthur B. Jr., Lt. Col., 144 Ledge Rd., Burlington.
Sparhawk, Sam, Capt., 76 Spruce St., Burlington.
Tomasi, Ernest P., Capt., 63 Barre St., Montpelier.

Virginia

Ballou, N. T. Jr., 1st Lt., 1200 Prince Edward, Fredericksburg.
Graham, Stephens, Col., 327 Oak Lane, Richmond.
Llewellyn, John T., Capt., 2708 West Ave., Newport News.
Martin, Walter B., Col., 339 Boush St., Norfolk.
Massie, John R. Jr., Capt., % Memorial Hosp., Richmond.
Meyers, Robert P., 1st Lt., 1200 E. Marshall St., Richmond.
Quillen, George H., 1st Lt., East Stone Gap, Va.
Randolph, Angus C., Capt., Va. Episcopal School, Lynchburg.
Russell, Delbert A., 1st Lt., Med. Col. of Va., Richmond.
Saunders, Wade H., Capt., 221 3d St. S.R., Roanoke.
Stehman, Vernon A., Capt., 1912 N. Lincoln St., Arlington.
Tucker, Ransom E., Major, Randolph Center.
Zimmerman, William W. III, Major, Purcellville.

Washington

Addington, Ercell A., Major, 3408 S. Manito Blvd., Spokane.
Butts, William S., Capt., 1311 W. 6th Ave., Spokane.
Carroll, Gerhard S., Capt., 1627 21st N., Seattle.
Collins, John D., Capt., 4110 McGilvra St., Seattle.
Dirstine, Morris J., Capt., 5810 Cowen Pl., Seattle.
Fairbourn, Edwin J., Major, 617 N. C. St., Tacoma.
Hardy, John L. Jr., Major, Endicott.
Henry, Randall W., Capt., Endicott.
Kellogg, Howard B., Lt. Col., 2011 24th Ave. N., Seattle.
Leavitt, Darrell G., Major, 1100 Summit, Seattle.
McDermott, Joseph A., Capt., % L. J. Little, Naches.
Nunn, Leslie L., Lt. Col., 401 Cedar St., Vancouver.
Porter, John B., Capt., 1206 Morton St., Port Orchard.
Robertson, Duncan, Capt., 1251 22d N., Seattle.
Slind, Ole, Capt., Providence, Seattle.
Smith, George C., Major, 1526 S. Madison St., Spokane.
Speir, Edward B., Lt. Col., 2400 42d St. N., Seattle.
Thornhill, Raymond P., 1st Lt., 1322 Monroe St., Spokane.

West Virginia

Ackerman, William E., Capt., 4 Cox Terrace, Wheeling.
Allman, William H., Capt., 201 Wood St., Clarksburg.
Armbrecht, George L., Major, 1141 National Rd., Wheeling.
Bateman, Howard G., Capt., 420 Highland Ave., Williamstown.
Dunman, Lester E., Major, Box 533, Gary.
Hughes, Carlisle B. Jr., Capt., C. & O. Hosp., Huntington.
Layman, Leslie H., Major, Holden.
McPherson, Kenneth M., Major, 43 Wickham Ave., Beckley.
Staats, Roydice, Capt., Cairo.
Strawn, Lucien M., Capt., 518 Lions St., Suncrest, Morgantown.
Whitlock, John W., Major, Raleigh, W. Va.

Wisconsin

Bachhuber, Edward A., Col., 306 William St., Mayville.
Cary, John F., Major, 630 N. 8th St., Sheboygan.
Englemann, Andrew T., Capt., St. Francis Hosp., LaCrosse.
Ferris, James W., Lt. Col., 2820 N. 40th St., Milwaukee.
Gollin, Frank F., Capt., La Farge.
Holman, Arthur M., 1st Lt., 2605 N. 9th St., Sheboygan.
Koepp, Charles E., Capt., 1554 Main St., Marinette.
Lifschutz, Leo M., Capt., 3216 Moorland Ave., Racine.
Murphy, James L., Capt., Park Falls.
Quisling, Gunnar D., Capt., 421 N. Patterson St., Madison.
Schwartz, Saul F., Capt., 1802 N. 12th St., Milwaukee.
Voigt, Philip F., Capt., Sheboygan.

Wyoming

Landis, Walter E., Capt., Keenan Bldg., Sheridan.
Ridgway, Eli C. Jr., Capt., Lane Dr., Cody.

Canal Zone

Bynoe, Ernest F., 1st Lt., P. O. Box 51, Colon.

England

Gurney, Theodore V., Capt., Monkton Combe, Bath.

ORGANIZATION SECTION

Washington Letter

(From a Special Correspondent)

Dec. 3, 1945.

Opposition to Truman Health Plan

Senator Robert A. Taft, Republican of Ohio, has disputed President Truman's denial that his $3,000,000,000 a year health insurance program was not "socialized medicine." The District of Columbia Medical Society, through Dr. William Earl Clark, president, commented: "As President Truman has very well stated, there is nothing essentially new about his compulsory health insurance plan. The medical profession, like the President, believes in spreading costs of medical care by means of prepayment. It wants the people of this country to have the best medicine has to offer. Where it differs from him is that, in its opinion, this can best be accomplished through the voluntary system, which it believes is the American way of life."

Hospitals Get Priorities on Penicillin

The Civilian Production Administration, successor to the WPB, has given civilian hospitals, veterans' hospitals and the U. S. Public Health Service priorities in obtaining penicillin from suppliers. Military and emergency orders receive top priority, and civilian hospitals get second preference. The agency reports that penicillin supplies are sufficient for essential United States requirements but the priorities were given to safeguard hospital supplies in the face of rising foreign demands, particularly from Latin America. The CPA is arranging with the Department of Commerce to restore export controls on the drug. The trade reports production, quality and effectiveness of penicillin increased during the war. Production in 1945 is estimated at more than 8,500,000,000 units, five times above 1944 production.

Hospitals Discuss Adjustment to Peacetime

The fifth annual meeting of the Maryland-District of Columbia Hospital Association, held November 29 and 30 at Baltimore, discussed adjustments to peacetime operation by hospitals. Affiliating groups are the Maryland Association of Hospital Pharmacists, Maryland Association of Medical Record Librarians, District of Columbia Association of Medical Record Librarians, District of Columbia Dietetic Association, American Association of Social Workers, Potomac District, and the Maryland Dietetic Association.

Posthospital Care for Alcoholic Addicts

The Women's Safety Committee of the American Automobile Association was advised by two District of Columbia medical men that posthospital therapy should be given to reduce alcoholism. Dr. Daniel I. Seckinger, deputy District health officer, and Dr. Leopold Wexberg, director of the District Alcoholic Clinic, said that facilities are badly needed in the capital for the treatment of alcoholic addicts.

President Truman Appeals for Safety Campaign

Federal agencies and departments have been asked by President Truman to conduct safety campaigns to cut the expense of accidents and fatalities to federal workers, which cost the government $67,500,000 last year. The chief executive in his message to the annual meeting of the Interdepartmental Safety Council outlined a six point program intended to remove work hazards, which killed 717 workers and seriously injured 81,000.

National Nutritional Program Being Studied

A national nutrition program to raise dietary standards is being considered by the Truman administration. The program is said to involve government subsidization of family supplies where there is lack of income to guarantee an adequate diet. The Department of Agriculture has submitted plans on raising dietary standards to the White House. The plans suggested include a broader school lunch program, including hot lunches in every public school, the financing to be by federal, state and local school governments. A relatively small number now receive lunches at government expense. Senators Aiken, Republican of Vermont, and La Follette, Progressive of Wisconsin, introduced a bill calling for food stamps similar to those used in the thirties to dispose of farm surpluses.

Council on Medical Service and Public Relations

MINUTES OF THE MEETING OF OCT. 18, 1945

The meeting was called to order by the chairman, Dr. E. J. McCormick, at 10:35 a. m. in the Board of Trustees room of the American Medical Association headquarters.

Members Present.—Dr. John H. Fitzgibbon, Dr. James R. McVay, Dr. A. W. Adson, Dr. Thomas A. McGoldrick, Dr. Louis H. Bauer, Dr. W. R. Brooksher, Dr. Olin West, Dr. Joseph S. Lawrence and Mr. Thomas A. Hendricks, secretary, and Mr. George W. Cooley.

Guests Present.—Mr. Louis A. Neff, American Cancer Society; Dr. Joseph S. Wall, president, American Academy of Pediatrics; Dr. Clifford C. Grulee, secretary, American Academy of Pediatrics; Dr. H. H. Skinner, Yakima, Wash.; Dr. James McLeod, president, South Carolina Medical Association; Dr. F. H. Falls, American Association of Obstetricians and Gynecologists; Mr. M. L. Meadors, director of public relations, South Carolina Medical Association.

Approval of Minutes.—On a motion by Dr. Adson, seconded by Dr. Fitzgibbon, the minutes of the meeting of June 21 and 22 were approved.

Annual Report.—Mr. Hendricks stated that the annual report of the Council was ready for publication.

Supplementary Report.—It was decided that the secretary and chairman of the Council should prepare a supplement to the annual report and present it to the Council members for approval at the December meeting. Definite suggestions as to the form of the supplementary report were made by Dr. Fitzgibbon and Dr. Adson, particularly as to the recommendations to be presented to the House of Delegates.

The Budget.—After some discussion Dr. Adson moved that Mr. Hendricks and Dr. Lawrence confer with Dr. West with reference to readjustments within the budgets of the two offices. Dr. McVay seconded the motion and it was carried.

Rating Committee.—It was announced that a meeting of this special committee was in progress in another part of the building with Dr. Sensenich in charge.

Michigan Invitation.—After discussion as to the next meeting of the Council, the secretary was instructed to wire an acceptance for the Council to attend a special meeting of state society presidents and other presidents sponsored by the Michigan State Medical Society on Sunday, December 2, at Hotel Continental.

Regional Conferences.—After considerable discussion as to various areas and cities in which conferences might be held, it was decided to leave this matter until the December meeting for a definite outline as to future programs.

E. M. I. C. Program.—Dr. Wall read an analysis of S. 1318. Members and guests discussed it at length. It was felt that the American Medical Association should take the leadership in regard to this and other bills. Dr. Skinner was asked to confer with Drs. Bauer and McGoldrick and Fitzgibbon in regard

to a motion he desired to put and in the recommendations for the Public Relations Conference.

American Cancer Society.—Dr. Bauer moved that the Council recommend approving the work under the program of the Service Division of the American Cancer Society. Dr. McGoldrick seconded the motion and it was carried. It was decided that no publicity should be given this approval until the House of Delegates had taken action on the report.

Prepayment Medical Care.—Holbrook Plan: Dr. Adson reviewed Col. Paul Holbrook's plan in some detail. It was suggested that the Council recommend that Colonel Holbrook and General Hawley be invited to address the House of Delegates with reference to the plan.

Hawkins Plan: Dr. Adson presented the Hawkins plan in detail and read questions he had raised and Mr. Hawkins' answers to the question. There was discussion of the plan by the Council members. Dr. Bauer moved that no further action be taken on this until Saturday morning when we have a report from the round table. Dr. Adson seconded the motion, which was carried.

Report of Mr. Cooley.—Mr. Cooley read his report on prepayment medical service plans. Dr. Brooksher made the motion that Mr. Cooley be commended on his report, which was seconded by Dr. Adson. Motion carried.

The motion was made and amended to read "the Council appoint an advisory committee to study the entire picture of medical service plans under the direction of the Council for the benefit of the Council and the American Medical Association and all component societies." This motion was carried. The chairman of the Council is to appoint the members of this committee.

Additional Personnel Needs.—Mr. Hendricks suggested that a number of field men be employed. It was decided that one field man should be employed and trained both in the Washington office and at headquarters.

Mr. Hendricks was instructed to look into the possibility of securing a man to assist in publicity work for the Council. He was instructed to make a report on progress along this line at the December meeting of the Council.

Men in Service.—There was considerable discussion on all phases of this problem. It is the consensus that everything possible be done to assist men in service.

Washington Office.—Dr. Lawrence reported on the work being done by the Washington office. He asked for definite information on A. M. A. opinion of bills at an early point so that he might be better able to talk with persons he meets in his Washington work. This brought up the question of interim authority. The opinion was expressed by Dr. Bauer that no action should be taken until the Trustees had expressed an opinion.

Council Representative at Wagner-Murray-Dingell Hearings.—No action was taken. It is the consensus that Dr. West will call on the Council if the need is felt.

Council History for Centennial Celebration.—The chairman, Dr. McCormick, instructed Mr. Hendricks and Dr. Bauer to prepare such a history.

Plan of Association of Industrial Surgeons and Physicians.—The Council feels that it cannot take action until it has further details.

Subscription to Public Health Economics.—It was felt that the Council office should have this publication and abstract articles of interest to Council members and supply them.

Next Meeting of Council.—A motion was carried that the Council meet at 9 o'clock on Sunday, December 2.

Interpretation of Fourteen Point Program by Dr. Bauer.—Dr. Bauer read the material he gave in Kansas City, and the Council heartily endorsed this paper and requested that it be printed with the full approval of the Council.

The meeting was adjourned at 11 o'clock Thursday evening, October 18.

E. J. McCormick, M.D., Chairman.
Thomas A. Hendricks, Secretary.

PREPAID MEDICAL CARE NEWS

Wisconsin

The State Medical Society of Wisconsin has approached the problem of prepayment medical care from a quite different angle than that of most medical societies. At the meeting of the society's house of delegates in November a plan was approved authorizing cooperation with private insurance carriers. While two local medical societies, one in Illinois and one in Ohio, have approved similar proposals for their own local areas, neither program is as far reaching as the Wisconsin action.

The 1944 Wisconsin house of delegates started the idea of using private carriers by approving a resolution which provided in part that "a proper committee of this society be instructed to confer with licensed insurance companies in this state in an effort to secure the extension of sickness care policies to a point as to provide the broadest comprehensive coverage possible within a premium structure that particularly appeals to the so-called low income group." This committee was appointed with Dr. H. H. Christofferson of Colby, Wis., as chairman. Other members were Drs. L. A. Copps, Marshfield; Charles Fidler, Milwaukee; C. E. Pechous, Kenosha, and C. O. Wingom, Madison.

A year later, in November 1945, the committee submitted a detailed report providing for the "Wisconsin Plan." In its report the committee proposed "that the medical profession of Wisconsin enter into agreement with such insurance carriers licensed in this state as are willing to do so providing for the "Wisconsin Plan" of prepaid insurance for the care and treatment involved in the fields of surgery, obstetrics, associated anesthesia and radiology, and hospitalization, embracing the following general points:

1. The "Wisconsin Plan" shall be approved by the State Medical Society of Wisconsin and in the form so approved, and without variation, shall be available to any licensed insurance company in Wisconsin for use in accordance with its terms.
2. The "Wisconsin Plan" shall provide:
   a. Full coverage benefits for care involved in the fields of surgery and obstetrics, whether given in or out of a hospital;
   b. Full coverage benefits for anesthesia and radiology, when given outside of a hospital;
   c. Broad benefits for hospitalization and therapeutic services performed in the hospital.
3. Income limits for those on the service plan basis will be $2,080 annually per single person and $2,600 for married persons.
4. Free choice of medical physicians is to be provided.
5. For nonhospitalized cases, the maximum anesthesia benefit is $15, and for miscellaneous operative radiology procedures the maximum is $35.
6. The total maximum hospital benefit will be $180.
7. The premium will be divided into two groups, the lower being for those who join as a part of a group and the higher for those who join individually.

Announcement by Abbott Laboratories of a Medical Expense Insurance Plan for Employees' Dependents

The directors of Abbott Laboratories have announced the adoption of a medical expense insurance plan for the dependents of their employees. This is an addition to the surgical plan now in operation.

The employees are at present insured for daily hospital and surgical benefits. The new plan will provide a limited protection for employees' dependents. The benefits include $2 for each office or hospital visit and $3 for each visit by the physician to the home. The limit is one visit a day per dependent and fifty visits per dependent in any one calendar year. In addition, laboratory fees and examination up to $25 a year are included.

This plan supplements for employees' dependents the insurance already in effect covering hospitalization and surgical benefits. The company also has a group accident and employees' health insurance policy.

SURPLUS MEDICAL AND HOSPITAL SUPPLIES

The Committee on Postwar Medical Service of the American Medical Association, December 1, adopted the following report, made by its subcommittee (Dr. Ernest E. Irons, Dr. Morris Fishbein, Dr. George M. Piersol, Miss Mary Switzer and Father Alphonse M. Schwitalla, chairman):

Legislative History

To understand the present situation with reference to surplus supplies, a brief review of the legislative history of the Surplus Property Act of 1944 is necessary (Public Law 457, 78th Congress, Approval Oct. 3, 1944).

The Surplus Property Act as passed by the Senate was not identical with that passed by the House. The Senate bill extended equal consideration to public and nonpublic educational and public health institutions. The House bill gave no specific status to nonpublic or non-tax supported agencies.

On the last day of the debate in the Senate, Senator LaFollette introduced an amendment which purported to give state and municipalities a time priority so that they may compete on a basis of equality with nonprofit non-tax supported agencies which did not have to attend particularly to purchasing regulations and requirements. The amendment was embodied in the final act in a modified form and is designated as section 13 (f):

> The disposal of surplus property under this section to states and political subdivisions and instrumentalities thereof shall be given priority over all other disposals of property provided for in this act."

On the basis of this provision, the legal department of the Surplus Property Administration ruled that states and political subdivisions and instrumentalities thereof have a priority not merely of time but, since a mere time priority would be useless, also a priority of access to information and a subsequent prior right to purchase surplus property.

A number of private agencies, as, for example, the American Council on Education, have consistently urged that the legislative history of the act modifies the term "priority" in such a way that it should be interpreted as conveying only a time priority to state institutions. The protests of a number of private agencies is a matter of record. Mr. Symington declined to accept this interpretation of section 13 (f).

On Oct. 17, 1945 a meeting was held of the officials of the Surplus Property Administration, of the Public Health Service and of the members of the advisory group. A regulation was discussed which would have set up a definite reserve for institutions performing a public health service. The term "a public health service" was understood in a very wide sense as meaning any service conducive to the public health. This liberalization of terms paralleled a previous liberalization of the term "tax supported institution" as meaning any institution which receives moneys from public sources for services rendered to public agencies (a hospital receiving E. M. I. C. funds, for example, would thus be considered as a tax supported institution). The Public Health Service was designated as the administering agency for health and hospital supplies. Not only was it to have the power to state what type of property should be reserved and the amounts to be reserved for special uses or for disposal but also it was to certify the institutions eligible for the procurement of such property. Applications by institutions were to be submitted for approval to the Public Health Service.

At this meeting public health authorities requested that, as a condition for eligibility to receive surplus supplies, financial statements be submitted in support of a claim for need of surplus property and in support of preferential allocations with reference to relative need. Several agencies opposed this demand of the Public Health Service, but it was upheld by the Surplus Property Administration.

At the conclusion of the meeting, suggestions were made concerning the revision of the regulations. Specific recommendations were made to the officials of the Surplus Property Board with the view of materially benefiting hospitals, schools and charitable institutions. Some of these suggestions were incorporated in the suggestions promulgated on Nov. 6, 1945.

On Nov. 2, 1945 a joint meeting of representatives of the Federal Security Agency, of the Public Health Service and its advisory committee and of the Office of Education and its advisory committee took place on call by the surplus property administrator. At this meeting a new draft of the regulation was discussed. This new draft had a tendency to eliminate the Public Health Service and the Office of Education as agencies for certifying eligibility of institutions for surplus properties. The Public Health Service and the Office of Education accordingly refused to approve the new regulation and undertook the revision of the draft which had been presented at this meeting. Under date of Nov. 6, 1945 a new set of regulations, S. P. A. Regulations No. 14, was published and this set of regulations is the result of the joint effort of the representatives of the Federal Security Agency, the Office of Education and the United States Public Health Service. If the criteria to be established on the basis of the new regulations are in harmony with the intent of Congress, these new regulations should be satisfactory to both the tax supported and the non-tax supported institutions. If, on the other hand, the new criteria do not carry out the intent of Congress, the non-tax supported institutions will be at a distinct disadvantage.

Regulation No. 14

Regulation No. 14 bears date of Nov. 6, 1945 and was issued Nov. 21, 1945. In his letter of transmissal the director of the Office of War Property Distribution says that the regulation was designed "to effectuate section 13 of the Surplus Property Act of 1944." The regulation recognizes the Federal Security Agency as the certifying agency for the disposal of surplus property in the health, educational and nonprofit fields and for the performance of the other functions necessary in such disposal. A Policy and Procedure Memorandum No. 2, Nov. 8, 1945, of the Federal Security Agency, Office of War Property Distribution, authorizes the United States Public Health Service to perform these various functions for the Federal Security Agency, as far as there will be disposal to, and utilization by, public health institutions and instrumentalities. The letter of transmissal further informs the recipient that the Division of Surplus Property Utilization of the United States Public Health Service is at present engaged in developing criteria and procedures for the distribution and utilization of surplus property for public health use. It is expected that these criteria will be completed at an early date and that they will be ready shortly for review by the advisory committee and for evaluation at a meeting of the advisory committee to be held some time in the week of Dec. 10, 1945.

According to the Policy and Procedure Memorandum No. 2, the United States Public Health Service under the authority of the director is charged with the obligation of performing the following functions: (1) the preparation of certified lists of public health institutions and instrumentalities; (2) the preparation of estimates and recommendations concerning property to be reserved for public health institutions and instrumentalities; (3) the development of criteria for the determination of legitimate and relative needs of public health institutions and instrumentalities; (4) the establishment of procedures under which applications by or for public health institutions and instrumentalities will be submitted and reviewed and the procedures to be followed for action subsequent to the review; (5) cooperation

with disposal agencies with respect to the giving of notices of available surplus property to public health agencies; (6) such other functions as may be necessary to fulfil the purposes and functions of Regulation No. 14 and in fulfilment of the intent for the public welfare of the entire act.

A number of significant passages—not all of them—might be here quoted:

1. *Scope.*—"This part grants to nonprofit institutions the opportunity to acquire surplus property and, in the case of educational and public health institutions, the right to a discount" (paragraph 8314.3).

2. *General Policy.*—"Section 13 (a) of the Surplus Property Act of 1944 provides generally, to the extent feasible, for transfer of surplus property on the basis of need to nonprofit institutions and instrumentalities so that they may have the opportunity to fulfil in the public interest their legitimate needs, and that surplus property that is appropriate for school, classroom or other educational use, and surplus medical supplies, equipment and property suitable for use in the protection of public health, including research, may be disposed of at a value which takes into account any benefit which has accrued or may accrue to the United States from the use of such property" (paragraph 8314.3).

3. *Eligibility.*—"The Federal Security Agency is charged with the responsibility for submitting to the surplus property administrator certified lists of institutions and instrumentalities eligible for the benefits provided under this part" (paragraph 8314.4).

4. *Criteria.*—"The Federal Security Agency shall develop criteria by which to determine legitimate needs of nonprofit institutions and instrumentalities which apply for surplus property under this part" (paragraph 8314.6).

5. *Disposals.*—"Any nonprofit institution whose application is approved by the Federal Security Agency, or on appeal by the surplus property administrator, shall be entitled to acquire from disposal agencies any surplus property available for disposal, at the fair value of such property and in lots not smaller than the smallest lots consistent with commercial practice" (paragraph 8314.8).

6. *Fair Values.*—"Such fair value shall not be greater than the lowest price which is offered to any trade level at the time of acquisition by the nonprofit institution or instrumentality" (paragraph 8314.9).

7. *Discounts.*—"Disposal agencies shall allow from the fair value of property as set forth in paragraph (a) a discount of 40 per cent on orders by or for educational or public health institutions or instrumentalities" (paragraph 8314.9).

8. *Certificate of Need.*—"Each application to the Federal Security Agency by or for a nonprofit institution or an instrumentality eligible for the benefits of this part shall bear a certificate by a responsible officer thereof that the property sought by the applicant is required for its own use to fill an existing need of the applicant and that it will not be resold to others within three years of the date of purchase without the consent in writing of the disposal agency" (paragraph 8314.10).

Disposal at Present of Surplus Property

Questions have been repeatedly asked by various agencies concerning the regulations and provisions under which disposition is now being made of surplus properties. A word concerning these is not out of place:

1. Army Procurement Regulation No. 7 permits army area commanders to dispose of property suitable for vocational education to those institutions which have conducted preinduction courses or which are now conducting courses for the training of men needed by the Army.

2. Surplus Property Administration Regulation No. 9 provides that local commanders of the Army may award surplus property to institutions, such as educational institutions, provided the value of the property does not exceed $300 and provided further that the property so disposed of is considered and declared "salvage," the term salvage being given a broad interpretation.

3. Apparently, property is even now being acquired under Regulation No. 14, Nov. 6, 1945, at sharp discounts, approximating 30 per cent or even more of retail prices.

Educational institutions have (1) contacted the local commanders of stations in which army properties have been in use during the war and have made arrangements for the purchase or removal of such properties or (2) they have sent lists to the corps area commanders through personal contacts and have been notified by such corps area commanders when the property is available or (3) they have contacted the local area commander, who has transmitted requests to the corps area commander directly for authorization or who has transmitted the request to the corps area commander through some state agency appointed for the purpose, in one state, the state board of education.

Disposal of Surplus Property to Individual Practitioners

On behalf of the American Dental Association, Dr. Camalier has taken great interest in clarifying the issues with reference to preferential concessions to dental veterans. He has taken a stand against special priorities and price concessions to dental veterans "applying for this material, who happen to state that they will practice in an area deemed critical by the United States Public Health Service and that other veterans, who may desire to practice in other states (where the need is) not deemed so acute, will not receive similar price concessions."

In his letter to Major L. F. Young, Sept. 19, 1945, Dr. Camalier reasons as follows: There is not now a proper distribution of dentists throughout the United States and there are areas of crucial shortage. But, as far as dentists are concerned, practically every community needs dentists and, wherever a veteran may locate, his services will be greatly needed. Dentists are not free to move from state to state. Nearly all dentists have licensure in one state. An adequate reciprocity plan has not been developed, and moving into another state means taking another examination for licensure. Since this situation exists, it would do no good to give priorities and price concessions for the purchase of dental equipment to dentists who locate in areas designated by some governmental agency and deemed an area of critical need. Such a procedure would not solve the problem of distribution of dentists. If such concessions and priorities are deemed desirable, they should be extended to every dentist veteran, no matter where he locates.

The promulgation of Regulation No. 7 and the listing in periodical journals of the regional officer of the Smaller War Plants Corporation has caused veteran dentists to apply quite generally for purchases of surplus material, and many have delayed opening their offices because they are waiting for word about the disposal of this surplus property. This has caused great confusion. Regulations should be eliminated. The priorities, price concessions, et cetera, should be greatly liberalized; otherwise the veteran dental officer "will be home many months before he is able to start practice." Dental equipment must be made available to the returning veteran dental officer in the simplest possible way without delay.

What is said here by Dr. Camalier concerning dental veterans should probably be said about physician veterans.

Coming Medical Meetings

American Academy of Allergy, Chicago, Dec. 10-11. Dr. Karl D. Figley, 316 Michigan St., Toledo 2, Ohio, Secretary.

American Society of Anesthetists, New York, Dec. 12-13. Dr. McKinnie L. Phelps, 745 Fifth Ave., New York 22, Secretary.

Puerto Rico, Medical Association of, San Juan, Dec. 14-16. Dr. Rafael A. Vilar, P. O. Box 3866, Santurce, Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARKANSAS

Personal.—Dr. Vida H. Gordon has resigned as director of the crippled children's division, state department of public welfare, and will enter private practice in Little Rock.——Dr. William P. Scarlett, Morrilton, formerly health officer of Wichita, Texas, has been named health officer of Little Rock.

CALIFORNIA

Name of Research Laboratories Changed.—The name of Bureau of Research Laboratories of the California Department of Public Health has been changed to the Virus Laboratory of the Division of Laboratories.

Medical Board Election.—At the annual October meeting of the California State Board of Medical Examiners Dr. Frank W. Otto, Los Angeles, was elected president, Dr. Herbert S. Chapman, Stockton, elected vice president and Dr. Frederick N. Scatena, Sacramento, reelected secretary.

Hospital Advisory Board.—Dr. John C. Sharp, Salinas, medical superintendent of Monterey County Hospital, is chairman of the hospital advisory board appointed by Governor Earl Warren to assist the state department of public health in the administration of the new hospital act, according to *California's Health.*

Human Case of Anthrax.—One human case of anthrax has been reported from Sutter County resulting from an outbreak of the disease in dairy and beef herds. The human case occurred in a man who had skinned an animal which had died of anthrax in Sutter County. A lesion developed on his wrist the next day and he was advised by a veterinarian to see his physician. A diagnosis of anthrax was made and the patient was placed in the hospital and treated successfully with sulfathiazole and penicillin.

CONNECTICUT

Commission on Care of Aged and Chronically Ill.—Gov. Raymond E. Baldwin has appointed the members of a newly created commission for the care and treatment of the aged, infirm and chronically ill which was authorized by the passage of substitute for house bill 144 by the 1945 general assembly. Members of the commission and their terms of office are as follows:

Dr. Abraham N. Creadick, New Haven, president of the Connecticut Cancer Society, three years.

Dr. Joseph H. Howard, Bridgeport, president of the Connecticut State Medical Society, two years.

John W. Lamb, Plainville, representative, Connecticut legislature, chairman of the committee on public welfare and humane institutions, two years.

James L. McConaughy, Cornwall, chairman, United China Relief, formerly lieutenant governor of Connecticut, formerly president of Wesleyan University, three years.

Frances B. Redick, Newington, formerly secretary of state, two years.

The state commissioner of health, Dr. Stanley H. Osborn, and the commissioner of welfare, Robert J. Smith, are ex officio members of the commission. The new statute directs the commission to "study the problems of care and treatment of the aged, infirm and chronically ill people of the state, plan, construct or purchase, lease or otherwise acquire and staff and operate such buildings as it deems necessary for the care of such persons. Said commission shall fix rates for care at such institutions and shall determine policies and adopt regulations necessary to carry out the provisions of this act." The statute empowers the commission to employ and fix the compensation of a director and such other employees as it may require and make the usual provision for a biennial report of findings, activities and recommendations to the governor and the general assembly. The appropriation originally requested for the project was reduced prior to passage of the bill to $25,000, which is inadequate for the acquisition of land, buildings or other capital equipment but which will enable the commission to make a thorough and detailed survey of the scope of the problem, the existing facilities and additional components which are needed, in order that recommendations for a progressive program may be brought before the next general assembly.

ILLINOIS

Personal.—Dr. Donald E. Rossiter has been named president of the board of health of Highland Park, succeeding Dr. Morley D. McNeal, resigned.——Dr. Walter H. Baer, Peoria, was to return to his position as superintendent of the Manteno State Hospital November 1. Dr. Edward Ross has been acting superintendent of the hospital since Dr. Baer entered the Army in 1942.——Dr. Ruth E. Church, health officer of Washington County, Iowa, has been named to a similar position for the McDonough-Fulton bicounty health unit, effective about December 1.

Chicago

The Fenger Lecture.—The tenth Christian Fenger Lecture of the Institute of Medicine of Chicago and the Chicago Pathological Society will be delivered at the Palmer House on January 14 by Lieut. Col. Baldwin E. W. Lucke, deputy director, Army Institute of Pathology, Office of the Surgeon General. His subject will be "Epidemic Hepatitis."

Dr. Phemister Honored.—To celebrate the twentieth anniversary of his chairmanship of the department of surgery, University of Chicago School of Medicine, residents, present members and past members of the department of surgery gave a dinner December 4 in honor of Dr. Dallas B. Phemister. The surgical residents staff presented a program at Billings Hospital in the afternoon. At an evening banquet a special bound volume of the December issue of the *Annals of Surgery*, which consisted of contributions of Dr. Phemister's pupils and former associates, was presented to him.

LOUISIANA

George McCoy Named Acting Dean at Louisiana.—Dr. George W. McCoy, professor and director of the department of public health, Louisiana State University School of Medicine, New Orleans, has been appointed acting dean. Dr. Wilbur C. Smith, who was named dean in September (THE JOURNAL, October 6, p. 470), has resigned.

MASSACHUSETTS

Graduate Course for General Practitioners.—The Lahey Clinic, Boston, sponsored a postgraduate course in medicine for general practitioners November 15-17. Methods currently used in the diagnosis of common clinical problems were covered in lectures and demonstrations by members of the staff of the clinic.

New Dean at Boston University.—Dr. Donald G. Anderson, Boston, recently associated with the distribution of penicillin, has been appointed dean of the Boston University School of Medicine. He succeeds Dr. Charles F. Branch. Dr. Anderson, who is 32 years of age, graduated at Columbia University College of Physicians and Surgeons in 1939.

Personal.—Dr. Charles F. Branch, formerly dean of Boston University School of Medicine, has been named director of Children's Hospital, Boston.——Charles A. Cook, Ph.D., formerly in charge of the Medical Biochemistry Department at the Lambert Pharmacal Company, St. Louis, has been appointed research director of the E. L. Patch Company, Boston. Dr. Cook's work has been concerned with the medical and biologic properties of the vitamins, proteins and amino acids, pituitary hormones and also synthetic and antibiotic chemicals which exhibit antiseptic activity.

MICHIGAN

Alpha Omega Alpha Lecture.—Dr. Isidor S. Ravdin, M. C., A. U. S., gave the Alpha Omega Alpha Lecture at Wayne University College of Medicine, November 15, on "Experiences on the Assam-Burma Border."

Knights of Columbus Post Named for Physician.—The sixty-five new members initiated November 4 by Port Huron Council Number 521, Knights of Columbus, adopted the name of the "Dr. DeGurse Class," honoring Dr. Thomas E. DeGurse, Marine City. The physician recently completed fifty years of practice in Marine City.

Changes in Health Officers.—Dr. Clayton C. Benjamin, Manistee, has resigned as health officer of Mason County to accept a similar position for the city of Port Huron.——Dr. Rolf Lanting, formerly of Gladwin, has been named health officer of Shiawassee County to succeed his wife, Dr. Helen Lanting, Owosso, who has been serving in the position for three years. Dr. Robert E. Flood, Northport, has been appointed director of district number 7 health unit to succeed Dr. Madelene M. Donnelly, Gladwin.

Graduate Course in Internal Medicine.—The department of postgraduate medicine, University of Michigan Medical School, Ann Arbor, will devote a course in internal medicine in January and February to "Clinical Applications of the Basic Sciences." Teaching will be conducted by the preclinical faculty and, to a great extent, by staff members from the clinical departments. The various aspects of the fundamental sciences which have immediate bearing on the practice of medicine will be emphasized. Applications may be addressed to Dr. Howard H. Cummings, chairman, Department of Postgraduate Medicine, University Hospital, Ann Arbor.

NEW HAMPSHIRE

Dr. Frechette Goes to Massachusetts.—Dr. Alfred L. Frechette, secretary and state health officer of the New Hampshire State Board of Health, Concord, has resigned to become health officer of Brookline, Mass. Major John S. Wheeler, formerly deputy health officer in New Hampshire, has been appointed acting health officer as of December 1.

NEW YORK

Tuberculosis Association Observes Silver Anniversary.—The Cattaraugus County Tuberculosis and Public Health Association celebrated its twenty-fifth anniversary October 11 with a banquet at the Olean House, Olean. Dr. Herman E. Hilleboe, Washington, chief of the tuberculosis control division, U. S. Public Health Service, was the guest speaker.

New York City

William Laurence Honored.—William L. Laurence, science reporter of the New York *Times*, has been given the annual award of the Society of Silurians for the best editorial staff achievement by a New York City newspaper man for 1945. Mr. Laurence won the honor for his articles on the development of the atomic bomb. The award included a scroll and a $100 war bond. The Silurian Society is composed of active and former newspapermen who served on New York City newspaper editorial staffs twenty-five or more years ago.

Food, Nutrition and World Populations.—The annual dinner and meeting of the New York Academy of Sciences will be held at the Hotel Astor, December 19. "Food, Nutrition and World Populations" will be the theme of the meeting, with Dr. Frank G. Boudreau, director, Milbank Memorial Fund, discussing "Nutrition as a World Problem"; Otto A. Bessey, Ph.D., director of the division of physiology and nutrition, Public Health Research Institute of the City of New York, "Nutrition as an Exact Science," and Charles G. King, Ph.D., scientific director, the Nutrition Foundation, Inc., "The Future of Nutritional Science."

NORTH CAROLINA

Needs of Children in a Postwar World.—North Carolina has been selected as the first state in which the American Academy of Pediatrics will conduct a thorough fact finding survey to determine the needs of children in a postwar world in order that the medical mind may assume the leadership in making available the facilities with which these needs are to be met. Dr. Joseph Lachman, director of the Pulaski County Health Department, has been assigned by the U. S. Public Health Service to the North Carolina Pediatric Society to serve as executive secretary. In December a short questionnaire will be sent to every physician in the state. Four avenues of approach will be followed:

Health studies for children, the survey to cover the extent of quality of such services—child health conferences, school health services, immunization, child guidance and public health nursing.

Distribution, qualification and activities of professional personnel, with the fact in mind that most of the pediatricians are in cities, but, even then, that much of the care of children is given by general practitioners. In this phase of the study, data will be collected on the distribution of pediatricians, general practitioners and specialists. An attempt will be made, through special questionnaires, to estimate the amount of time devoted by general practitioners to the care of children, and it is hoped also to obtain data from pediatricians relating to the size of the case load.

Hospital facilities, including outpatients, clinics and laboratories, location, cooperation and character of public health facilities available, nervous and mental hospitals, tuberculosis, contagious and convalescent.

Education of physicians with reference to children, including medical schools to determine the quality and quantity for the training of child care. Data will be obtained on staff, curriculums, number of pediatric beds available for teaching and opportunity for study of such pediatric specialties as allergy, rheumatic fever and mental hygiene. One of the most important aspects of the survey will be that of the medical doctor and the activities of public health, including the providing of medical services to children by state and local health departments, as well as by voluntary agencies. This phase of the survey will include child health conferences, mental hygiene clinics and school health programs as well as public health nursing concerned with children.

Dr. Arthur H. London Jr., Durham, is president of the North Carolina Pediatric Society.

NORTH DAKOTA

New Director of Maternal and Child Health.—Dr. Russell O. Saxvik, who was recently released from service in the Army of the United States, has been appointed director of maternal and child health for the North Dakota State Department of Health. Dr. Saxvik graduated at the Rush Medical College in 1940.

OHIO

The Lower Lecture.—Dr. Charles S. Best, professor of physiology, University of Toronto Faculty of Medicine, delivered the annual Lower Lecture before the Academy of Medicine of Cleveland November 16 on "Hormonal and Dietary Factors in the Pancreas."

Toledo Postgraduate Day.—The twelfth annual Postgraduate Day, held under the auspices of the Medical Institute of the University of Toledo November 2, was designated a memorial to the late Dr. John G. Keller. This custom of honoring a graduate of the old Toledo Medical School has been in effect since the Postgraduate Day was established.

Historical Museum Dedicated.—On October 6 the Cleveland Medical Library Association dedicated the Howard Dittrick Museum of Historical Medicine in honor of its founder, Dr. Howard Dittrick, retiring president of the library association. A feature of the program was the presentation of a portrait of Dr. Dittrick to the library. The picture is the work of Mary Seymour Brooks. The Museum of Historical Medicine was named in honor of Dr. Dittrick last year (THE JOURNAL, Dec. 30, 1944, p. 1159). Dr. Dittrick became curator of the museum in 1928 and director in 1935.

Prentiss Foundation Awards $500,000 for Biochemistry.—The Elisabeth Severance Prentiss Foundation of Cleveland has made a grant which will amount to about $500,000 to finance a greatly expanded department of biochemistry at Western Reserve University School of Medicine, Cleveland. The money will be paid to the university in quarterly payments over a ten year period, subject to certain conditions. The selection of a department head is now under way. The chair of biochemistry was left vacant recently when Victor C. Myers, Ph.D., was named director of a newly created department of clinical biochemistry (THE JOURNAL, August 25, p. 1239). According to an announcement, the school of medicine will follow the British pattern of having one department of biochemistry to carry on research and give instruction in chemistry as it affects all forms of life and another to perform a similar function as it affects more direct clinical observation and the diagnosis of human illness.

WEST VIRGINIA

Changes in Health Officers.—The following physicians have been appointed part time health officers of the places indicated: Charles R. Kessel, Ripley, Jackson County; Perry F. Marks, Walton, Roane County; James W. Stokes, Hinton (part time for the city of Hinton), and Jerome C. Arnett, Rowlesburg, who will serve temporarily as health officer for Preston County in the place of Dr. Charles Y. Moser, Kingwood.

Hospital Field Representative Named.—Mrs. George Fordham, formerly hospital superintendent and director of nurses at Laird Memorial Hospital at Montgomery, has been appointed by Dr. John E. Offner, Weston, state health commissioner, as hospital field representative for the division of maternal and child health. The new office was created to provide nursing supervision to hospitals accepting patients under the E. M. I. C. program.

Association of Pathologists Organized.—The Association of Pathologists of West Virginia was organized in Morgantown, October 26-27, with Dr. Clement C. Fenton, professor and head of the department of pathology, West Virginia University School of Medicine, Morgantown, as president and Dr. William T. McClure, Wheeling, secretary-treasurer. Speakers at the meeting included:

Dr. Fenton, Problem of Technicians.
Dr. Edward J. Van Liere and Gideon S. Dodds, Ph.D., both of Morgantown, Newly Formed West Virginia University School of Medical Technicians.
Dr. Eugene De Angelis, Morgantown, The Use of Plastics to Replace Cover Glasses in Microscope Slide Preparations.
Dr. Walter J. G. Putschar Jr., Charleston, Rocky Mountain Spotted Fever.

Special Society Elections.—Dr. William F. Beckner, Huntington, was elected president of the West Virginia State Conference of Social Workers at the annual meeting held in Charleston early in October. Dr. Leo H. Mynes, Charleston.

director of health service for Kanawha County schools, has been reelected president of the West Virginia Tuberculosis and Health Association for the fifth consecutive year. Other officers elected include Dr. William P. Bittinger, Summerlee, vice president; Miss Mae M. Maloney, Charleston, secretary, and Robert C. Hawkins, Charleston, treasurer.

Personal.—Drs. Frank V. Langfitt, Clarksburg, Walter W. Point, Charleston, and John J. Brandabur, Huntington, have been appointed members of the Public Health Council for terms ending June 30, 1949. The new appointees, who take office immediately, succeed Drs. Morgan T. Morrison, Sutton, Benjamin H. Swint, Charleston, and William C. D. McCuskey, Wheeling, who have served for several years as members of the council.——Dr. Orin R. Yost, Aiken, S. C., has been named superintendent of the Weston State Hospital (mental), Weston, to succeed Dr. Harry A. Garrison, who resigned as superintendent several months ago (THE JOURNAL, July 21, p. 893). Dr. H. O. Van Tromp, French Creek, has been acting superintendent since July 1. Dr. Yost was to take over the new work December 1.——Dr. Lawrence F. Boland, Williamson, has been named health officer of Mingo County, succeeding Dr. Sixtus G. Zando.

GENERAL

Special Society Election.—Dr. Eugene M. Blake, New Haven, Conn., was elected president of the American Ophthalmological Society at its meeting in Hot Springs, Va., November 12-14. Dr. John Burke, Washington, D. C., is vice president, Dr. Walter S. Atkinson, Watertown, N. Y., secretary-treasurer, and Dr. Wilfred E. Fry, Philadelphia, editor of the *Transactions*.

Extend Service for Handicapped.—At the suggestion of the Baruch Committee on Physical Medicine, the National Society for Crippled Children and Adults, Chicago, plans to establish immediately a central national registration and placement service for trained specialists in such work who are now in the armed forces and may want to continue their work in civilian life. A director of the employment exchange will be employed who will also be in charge of clearance of information on training facilities and scholarships for all persons, either civilian or military, who wish either to continue or to enter any phase of work for the handicapped.

The Louis Livingston Seaman Fund.—The New York Academy of Medicine announces the availability of the Louis Seaman Fund for the furtherance of research in bacteriology and sanitary science. One thousand dollars is available for assignment in 1945. This fund has been made possible by the terms of the will of the late Dr. Louis Livingston Seaman and is administered by a committee of the academy. The committee will receive applications either from institutions or from individuals up to December 1. Communications should be addressed to Dr. Wilson G. Smillie, chairman of the Louis Livingston Seaman Fund, 1300 York Avenue, New York 21. The fund will be expended only in grants in aid for investigation or scholarships for research in bacteriology or sanitary science. The expenditures may be made for the securing of technical help, aid in publishing original work and the purchase of necessary books or apparatus.

Organic Antimony Compound for Treatment of Filariasis.—Drs. Theodore G. Klumpp, New York, Justus B. Rice, New York, vice president in charge of medical research, Winthrop Chemical Company, Inc., and Dr. Harry M. Rose and James T. Culbertson, Ph.D., both assistant professors of bacteriology at Columbia University College of Physicians and Surgeons, New York, are checking on clinical experiments at the School of Tropical Medicine, San Juan, Puerto Rico, used in organic antimony compounds in the treatment of filariasis. Stabanose, a new organic antimony compound, and Neostibosan, both developments of the Winthrop Laboratories, have been used in the clinical tests conducted for the past year at the San Juan School of Tropical Medicine. First publication on the experiments was a scientific paper prepared by the Columbia University scientists and read before the meeting of the American Society of Tropical Medicine in Cincinnati November 15.

Pooling of Funds Urged in Health Report.—The pooling of the present separate competitive money raising appeals of the separate health agencies into a national health campaign, which will make for more equable distribution of funds, is urged in a recent report presented by Selskar M. Gunn, C.P.H., and Dr. Philip S. Platt, Ph.D., New York, through the National Health Council and under the auspices of the Rockefeller Foundation. The report involved field work and research for three years on 568 agencies in sixty-five cities and twenty-nine states. The 1945 total intake for the fifteen principal health agencies, including their national and local units, amounted to $58,000,000. This total included $100,000 raised by the American Heart Association and $16,500,000 raised by the National Foundation for Infantile Paralysis. There is $94 available for treatment and research on each case of infantile paralysis, $22 for each case of tuberculosis, $8 for cancer and 3 cents for each cardiac case, the condition causing the greatest number of deaths. The report also urged the establishment of an effective health council in every community, representing a voluntary affiliation of all the local health organizations. Although the study credits the private agencies working in the fields of tuberculosis, cancer, mental hygiene, blindness and so on with much of the health progress of the twentieth century, it deplores their lack of central direction and planning. It points out that the individual health organizations have sometimes overlapped and duplicated one another's efforts. The report recommends the expansion of the work of the National Health Council, with a dynamic program and effective field services to function on request for member organizations throughout the country.

Disbursements for Poliomyelitis Care.—Close to $1,000,000 in emergency aid to poliomyelitis epidemic areas was disbursed by the National Foundation for Infantile Paralysis in forty weeks of this year, Foundation President Basil O'Connor said October 24. Of this amount a little more than 75 per cent went to four states: North Carolina $229,138, Illinois $218,200, New York $198,755.40 and Virginia $106,092.51. The total for the country was $986,526. The principal expenses in connection with poliomyelitis epidemics, he continued, are hospitalization, salaries of doctors and other professional personnel, purchase of special equipment and the transportation of patients. Infantile paralysis, he added, is one of the most expensive diseases in medicine. Few families can meet the cost of the average case of poliomyelitis, which is around $1,000. Funds sent to states supplement resources of the foundation's county chapters, which retain every year, for the care and treatment of local poliomyelitis patients, one half of all contributions in the county to the annual March of Dimes. The other half goes to the national foundation for scientific research, education and emergency aid in epidemics. While there were fewer infantile paralysis cases throughout the country in the first forty weeks of this year than there were for the same period last year, twenty-six states reported higher totals than last year. Utah reported nine times its 1944 total, Texas and Massachusetts almost five times, and Oklahoma, Tennessee and Wyoming more than three times. So far this year $30,000 in emergency aid has been sent to Utah, which experienced the most severe epidemic, in proportion to its population, of any state in the union. Funds sent to North Carolina, it was explained, are being used not only for victims of this year's outbreaks but for continuing care of patients from previous outbreaks. Tennessee received $50,000 disbursed under the supervision of Dr. Robert H. Hutcheson, state health director. As of October 6, this year, Tennessee had reported 347 cases, compared with 103 for the entire year of 1944. Many other states too are still caring for victims of the 1944 epidemic, second worst in the nation's history, when 19,272 men, women and children were stricken. In forty weeks of 1945 a total of 10,259 cases have been reported for the United States.

Health Officers Act on Proposed Health Recommendations.—The Association of State and Territorial Health Officers announced the adoption of a resolution recommending that responsibility of school health programs be recognized as a joint responsibility between the health and education department of federal, state and local levels. In general, the resolution pointed out, health education and physical education of school children should be regarded as the primary responsibility of the department of education working in cooperation with and with the assistance of departments of health. The resolution further recommended that appropriate federal agencies be requested to carry out research and demonstrations in order to develop improved technics for school health medical services and to evaluate existing technics, carry out surveys to evaluate current practice in this field and determine needs for expansion of services and seek federal funds for the expansion of school health programs in accordance with established needs, such funds to be allotted on a grant-in-aid basis to state health agencies. The proposed establishment of a department of public health and welfare with a cabinet officer at its head was also discussed by the association. If this organization is carried through, the association respectfully

recommends that adequate measures be taken to insure that public health receives sufficient freedom of action to carry on its important function of maintaining optional health for all the people. It is urgent that, if such a combined department is formed, permanent career undersecretaries or assistant secretaries be in charge of the two activities and that they be of equal rank. This is said to be, however, less desirable than the formation of a separate department of public health with a cabinet officer in charge, the association affirms. The association makes this recommendation in the interest of better public health administration on a federal level and the coordination of all civilian public health activities in a single department, thereby rendering liaison and cooperation with the several states and territories the more efficient and effective. This, in turn, would bring about an improvement in general public health work throughout the entire country and enable this department to administer any future legislation pertaining to public health with much greater efficacy, with a smaller administrative overhead for services rendered.

LATIN AMERICA

Health Activities in Latin America.—*Proposed Medical School in Trinidad.*—Work on the establishment of a medical school in Trinidad may be completed by October 1946, officials of the West Indian colony believe, it is reported. Formulation of plans for the creation of the institution will be entrusted to a commission of London University. In addition to furnishing the faculty, McGill University Faculty of Medicine, Montreal, is expected to supervise the activities of the new school. McGill authorities have consented to cooperate. In some quarters London auspices are preferred to the affiliation with Canada, it is reported. It is argued that a degree obtained in an auxiliary of a London institution would be registrable in the United Kingdom and in all West Indian colonies.

Visitors to the United States.—Dr. Fernando Carvalho Luz, Bahia, recently arrived in Miami on the Brazil Clipper of the Pan American World Airways, en route to New York for a year's study in surgery at Columbia University under a fellowship awarded by the Commonwealth Fund.——Dr. Gilberto G. Villela, chief of the division of chemistry and pharmacology, Instituto Oswaldo Cruz, Rio de Janeiro, Brazil, has joined the staff of the University of California Medical School, San Francisco, for the current term, as lecturer in pharmacology, according to the University of California *Clip Sheet.*——Dr. Aniceto Solares, formerly rector of the University of San Francisco Xavier, Sucre, Bolivia, is visiting the United States as a guest of the department of state. Dr. Solares is an ophthalmologist.

Personal.—Lieut. Col. Chester L. Davidson, M. C., has been named chief of the surgical service at Gorgas Hospital, Ancon, Canal Zone, to succeed Dr. Howard K. Tuttle, who retired recently to end twenty-seven years' affiliation with the Panama Canal Health Department. Colonel Davidson has been on duty with the health department since Jan. 9, 1944, having served as special assistant to Dr. Tuttle since last summer. Dr. Tuttle was assistant chief of the surgical service from 1922 to 1943. He was named chief on the retirement of Dr. Troy W. Earhart. He and his wife will leave Panama to establish residence in Hollywood, Calif.

Mexican Congress of Cancer.—The second Mexican Congress of Cancer of the Third Medical Week of the Occident will be held at Guadalajara, February 3-9. Dr. Manuel Riebeling is president and Dr. Enrique Garcia Ruiz is secretary.

Inter-American Congress on Radiology Postponed.—The second Inter-American Congress of Radiology, scheduled to be held in Havana next January (THE JOURNAL, April 21, p. 1068), has been postponed.

Radium Institute.—The Instituto Brasileiro de Radium, with headquarters in the hospital of Dr. Francisco Fernandes Eiras of Rio de Janeiro, was opened on July 23.

Physicians Strike in Argentina.—On October 8 the Argentine Medical Association decided "in principle to effect a partial strike of doctors," newspapers reported. In some of the main hospitals in Buenos Aires a partial strike was already in effect. This crisis was brought about by the dismissal of four doctors belonging to the staff of the Railroad Workers' Hospital who had refused to attend a function in honor of Juan Peron, vice president, organized by the secretary of labor and public welfare. All forty other doctors in the same hospital immediately went on strike as a protest, and their actions have been copied by doctors of other hospitals. According to the plans of the medical association, doctors should refuse to attend any but the most urgent cases and should refuse to check in and out at hospitals, so that the government may not know which doctors are on strike and which are not.

Deaths in Other Countries

Maurice Arthus, at one time professor of physiology at the Faculty of Medicine in Lausanne and director of the Institut de Bactériologie et d'Hygiène, died in Fribourg, Switzerland, in February, aged 83.——**Herbert E. Durham, Sc.D.,** known for research in yellow fever, died in Cambridge, England, October 25, aged 79.——**Dr. Robert D. Gillespie,** physician for psychologic medicine at Guy's Hospital, died in London, aged 47.

Government Services

Regulations Governing Penicillin

All orders for penicillin from American civilian hospitals, U. S. veterans' hospitals and the U. S. Public Health service must be treated by suppliers as though the orders bear CC preference ratings, the Civilian Production Administration announced November 23.

Distributors ordering penicillin for hospital use will receive, on certification, the same preferential treatment. (Orders from army and navy hospitals already receive MM preference ratings.) The action was effected by issuing direction 4 to conservation order M-300. Supplies of penicillin are adequate to meet all essential requirements in this country, officials state. The purpose in issuing the direction is to safeguard hospital supplies in the face of rising foreign demand. The United States is the only large producer of penicillin. The Civilian Production Administration now is working with the Office of International Trade Operations of the Department of Commerce to restore export controls on this drug. Producers of penicillin are required to give CC preferential treatment to the orders covered by this direction, up to 40 per cent of their production in the preceding calendar month or of the estimated production in the current calendar month, whichever is greater. All the penicillin which a producer may purchase for resale is also subject to the direction. Because of the increased production of penicillin in tablet, capsule and ointment form, which has somewhat decreased production in the injection form used by hospitals, the direction requires producers, if possible, to operate their facilities in such a manner as to provide adequate quantities of penicillin in the dosage forms required to fill hospital and certified orders. The same rule applies to persons purchasing penicillin for resale when they possess facilities for preparing the drug in dosage form. Monthly reports of production, stocks and shipments will be required from producers, and from distributors who buy penicillin from producers for resale under the distributors' own labels. Civilian Production Administration officials said that the issuance of this direction will not affect the obligation of suppliers to give first preference to orders bearing AAA (emergency) or MM (military) preference ratings. As an example, they said that orders from Army-Navy hospitals, which bear MM ratings, will take preference over orders from civilian hospitals.

Production of penicillin has increased steadily. The 1945 estimated production, in excess of 8,500,000,0000 units, is more than five times the 1944 production of 1,633,000,000 units. Present capacity of the industry, which began commercial manufacturing during the war, is around 800,000,000 units a month, and the prospect is that processing improvements will raise this figure.

Although production did not reach capacity in the summer and early fall, it is now increasing, as these figures show:

Third Quarter Actual Production, 1945		Fourth Quarter Estimated Production, 1945	
July	688,980,000,000 units	October	612,470,000,000 units
August	636,510,000,000 units	November ..	657,960,000,000 units
September ..	586,370,000,000 units	December ...	698,100,000,000 units

Both the quality and the potency of penicillin have risen. Originally, 100 units per milligram was acceptable for clinical use, but the average potency today ranges from 500 to 800 units per milligram. Eighteen months is now the effective life of a unit, compared with a three months life at the beginning of commercial production.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Nov. 3, 1945.

The Prime Minister and the Medical Profession

At the Harveian commemoration dinner of the Royal College of Physicians the Prime Minister, Mr. Attlee, in proposing the toast of the college, remarked that Lord Moran, the president, had rendered a special service during the war years when the war cabinet was often anxious about Mr. Churchill because of his vigorous traveling habits. It was always a comfort to them to know that in those expeditions he was in the care of Lord Moran. In regard to the government's proposals for a national health service Mr. Attlee regretted that he was not able to announce them at present, but whatever might be the difficulties of agreeing on the practical means for attaining the ends, the ends themselves were, he believed, approved by the whole country. What the government sought was a service which would be comprehensive in the double sense of being available to every member of the population and of covering every form of medical activity. No patient would be without the treatment he needed through lack of money or lack of organization to provide the necessary facilities. A service is needed in which professional men and women are able to devote themselves to their great calling without financial anxiety and without any feeling of being restricted and overcontrolled by regulations. We need great improvement in our hospital service, in the facilities for diagnosis and treatment outside hospitals, in the number and distribution of medical men, both consultants and general practitioners, and perhaps above all in the planning and organization of the different branches into an integrated whole. The task is not easy but is going to be done. Above all it is realized that for a plan to be successful it must have the help and cooperation of the profession itself. Mr. Attlee believes that the profession is as eager as the government to have a really good service.

A Battlefield Inquest

That valuable publication, the *Army Medical Department Bulletin*, which was issued by the War Office during the war to keep alive a sense of unity and interest among medical officers who received their journals irregularly and after long delays, has reached its final issue. Among the half dozen brief but full and well documented articles is one entitled "Battlefield Inquest." We have had, as shown in previous letters to THE JOURNAL, reports showing the great saving of lives by the new forward surgery. But little was known of the men who died on the battlefield so soon after being picked up that the medical services had no chance of doing anything for them. When the last battle began in Italy an enterprising expedition made its way forward to answer this question by making necropsies before the dead were removed from the battlefield for burial. Twenty-three examinations were made on men found dead on the field and 10 on others who died before operation. The prospects of recovery were assessed as none in 17 of the 33 cases, slight in 9, fair in 4 and good in 3. Four examples will give an idea of the standards applied: Case 1: An open wound into the lung with pneumothorax and hemothorax; brachial artery also divided; prospects of recovery slight. Case 2: Divided femoral artery; prospects of recovery good. Case 3: Two perforations of the jejunum, with 2 to 3 feet prolapsed; two perforations of the stomach and two of the colon; the peritoneum held 1,400 cc. of blood; man survived four and one-half hours; prospects of recovery fair. Case 4: Anterior wall of the heart shot away; prospects of recovery none.

Of the immediate causes of death, hemorrhage was the most important. In 14 of the 33 cases it was the essential factor and in 6 others was second in importance. Of 3 cases regarded as presenting a good chance of recovery, 2 deaths were from hemorrhage and 1 from gas gangrene. Recent work shows that loss of blood is often much in excess of what is supposed and is usually the important factor in deaths attributed to "shock." In extensive or multiple limb wounds loss of blood is often greater than in penetrating wounds of the chest or abdomen. In 13 head wounds nothing was found to call for revision of the present evacuation policy by which a man arrives at a neurologic unit within twenty-four hours of injury. Few men wounded in battle die who might have been saved.

Improved Pay and Conditions of Service for Nurses

The minister of health has stated that the shortage of nurses has reached a critical stage. Wards in general hospitals, sanatoriums and mental institutions all over the country have been closed because of the shortage of nursing staff. Accordingly a new code of higher salaries has been set up in the hope that the shortage of 33,000 can be met in a comparatively short time. The salaries of nurses will be increased by $200 to $300 a year. A trained staff nurse will begin at $600 and ultimately earn $900 a year. In all cases board and lodging and other emoluments are provided in addition. The ministry of health has also issued a booklet, "Staffing the Hospitals," which increases the attractions to the profession, providing a code which will operate as soon as circumstances permit. Training is to be planned so that nurses have adequate time for study, four weeks paid holiday a year in addition to sick leave and representative councils and a national joint council to safeguard conditions.

PARIS

(From Our Regular Correspondent)

Oct. 30, 1945.

The Reorganization of Public Health Services

Dr. Billoux, minister of public health, reported in September the results of a year's work. The conditions left by the Germans were deplorable. One of the problems was to provide the country with drugs and medical supplies. Of 12,000 pharmacies, 1,326 were damaged and 317 were closed. A number of laboratories and pharmaceutical concerns were damaged. The prevention of epidemics—a great danger because of the repatriation of some 2,000,000 people—was another problem. This danger was overcome, for in June and July 1945 only 190 cases of typhus were reported. Other problems were the organization of centers for undernourished children and the establishment of resorts in France and Germany where French children could spend their holidays; the systematic control of the repatriated, and x-ray examination for the prevention of tuberculosis, which has increased alarmingly.

Blocks of hospitals comprising about 50,000 beds were bought from the Allies for the use of civilians. This was accomplished with the scanty means at the disposal of the minister of public health. Prevention is to be the main concern for the time being. To attain this the minister has in view the reorganization of the local and central services of public health. There will be eight central sections in the Ministry of Public Health: 1. General medicine, which will prepare and control laws concerning the practice of medicine and related professions, the training of nurses and social workers and the sanitary supervision of dwellings. 2. Public medicine for the prevention of epidemics and to provide for sanitary measures in general and rural hygiene in particular. 3. Social medicine, which will organize campaigns against tuberculosis, cancer and rheumatic fever and will promote mental hygiene. 4. A pharmaceutical

section. 5. A section for the protection of maternity, infancy and adolescence. This section will also care for homeless children and delinquent children. 6. A section of mutual help (Entr'aide sociale), which will take care of hospital services, the organization of convalescent homes for workers and the coordination of all private and public organizations of assistance. 7. A section for the family, which will maintain the necessary contact with all associations dealing with problems of the family. 8. A temporary section, concerned with matters pertaining to the health of the repatriated and the sanitary measures for damaged regions.

Local services of the Ministry of Public Health will be reorganized. The services will be decentralized: The regional directions will be suppressed and redistributed on a district basis (base departmentale). A permanent contact between the central and the district services will be established.

Alcoholism

In the *Semaine des hôpitaux* Derobert publishes the following statistics of the decrease of psychiatric diseases due to alcohol:

Years	Hospitalization for Alcoholism	Years	Hospitalization for Alcoholism
1936	3,016	1940	2,562
1937	3,358	1941	2,162
1938	3,500	1942	796
1939	3,492	1943	626

The same tendency was found at St. Antoine's Hospital, psychiatric ward, for the year 1944:

Years	Total Number of Patients	Admission for Alcoholism
1941	442	111
1944	239	16

In a preceding letter, attention was called to the decrease of visceral alcoholism and, above all, of hepatic cirrhosis in Paris. A study covering all France, published by the General Institute of Hygiene, has confirmed this fact. In 1941 the persistence of inebriety due to the consumption of wine was found only in the districts of Lyons and Montpellier, both of which are conspicuous for their production of wine.

Another agent favoring inebriety in those districts was the underfeeding from which the inhabitants suffered, together with a concomitant and persisting ingestion of alcohol, which produced speedy hepatic alterations.

The part of wine, as a cause of alcoholism, is emphasized in an inquiry made by P. Perin among 460 physicians in forty-eight districts, recently published in the book "Crusade Against Alcoholism"; 206 physicians charge wine with being the only cause of alcoholism.

Simplified Method of Aschheim-Zondek's Test of Pregnancy

At a meeting of the Society of Endocrinology, Aschheim described a simplified method of the classic Aschheim-Zondek test for pregnancy. The technic is as follows: A single subcutaneous injection of 0.5 cc. of the urine to be examined is made in 2 female rats which have not yet attained puberty. These rats should be 4 to 5 weeks old and weigh 22 to 35 Gm. In seventy-two, eighty-four and ninety-six hours after this injection, vaginal smears of the 2 rats are taken. After sixty-six to seventy-two hours epithelial cells without leukocytes are found. After eighty-four to ninety-six hours keratinous cells appear; these keratinous cells constitute the test of pregnancy. It is unnecessary to kill the animals, as done in the classic pregnancy test, and they can be used for further experiments. Using this method, the author has examined urine of 39 pregnant women, 30 nonpregnant women and 1 of a man with testicular teratoma; the results compared with other pregnancy tests were satisfactory. Up to now the earliest examination has been made forty-one days from the beginning of the last menses. The new method is simple and economical. Aschheim remarked that this simplified method requires ten minutes to perform as against thirty minutes for the classic method and fifty minutes for the Friedmann-Brouha test on rabbits, which requires the services of two persons.

MOSCOW

(From a Special Correspondent)

Nov. 13, 1945.

Medical Sequelae of War

Dr. Semashko believes that it is important for medical workers and the various departments of public health to study the effects on the Soviet Union of the war just ended. A study of this sort will in all probability explain the fact that Russia has escaped epidemics of disease despite the mass movements of population from fascist occupied regions, despite poor nutrition and lack of housing and fuel. The Soviet Union has been able to prevent epidemics because of the services of the state health organizations. Every citizen has available to him free medical aid in dispensaries, outpatient departments, hospitals, sanatoriums and other medical institutions. Dr. Semashko emphasizes the necessity of uniform planning and action by various organizations and institutions in combating epidemics. Uniformity of planning makes for economy of forces and expenditures. Preventing disease plays an important part in Soviet health services. Adherence to this principle played an important part in wartime in preventing epidemics. Great difficulty was experienced in maintaining cleanliness of inhabited areas on account of shortage of workers and transport. The people themselves in the towns kept their dwellings and cities clean. In heroic Leningrad the streets were kept as clean during the seige as they were in peacetime, thanks to the efforts of the inhabitants. Flaring up of epidemic diseases occurred in certain districts, but they were rapidly eliminated by adoption of quarantine measures. Despite the horrible damage wrought by the fascists in the Ukraine, shortly after the expulsion of the Germans a network of medical institutions was rebuilt so that by January 1945 the number of such institutions was almost up to the prewar level.

Silber's Studies in Immunology

Professor L. A. Silber has devoted twenty-five years of investigation to the subjects of immunity, ultraviruses and malignant tumors. He has written a number of papers on symbiosis of bacteria and viruses. In his work on cancer he was able to separate a virus-like agent. Extracts of newly formed neoplasms, he reported, were capable of converting normal cells into malignant cells. After many years of study on the different forms of encephalitis Silber established in 1944 the existence in Russia of the Scotch encephalomyelitis. Silber's work has been effective in organizing the study of ultraviruses. Because of his initiative and energy, the Council of Peoples Commissars of the Soviet Union set up in 1935 a central virus laboratory which now forms part of the Institute of Experimental Medicine. The plague vaccine produced by Silber proved to be ten times more effective than any of the vaccines produced from dead bacteria. Silber was first to discover that certain ultraviruses, smallpox virus for example, can exist in the yeast in which they have been placed experimentally or in which they are found naturally under conditions that would kill them outside the yeast. This discovery led to a completely new idea as to the manner in which viruses exist in nature. The discovery of tick borne encephalitis in the Soviet Union was likewise made by Silber. He studied the epidemiology of this infection, then new to science, under difficult field conditions in distant Taiga and demonstrated that the disease is transmitted by ticks. He and his associates isolated an ultravirus which causes tick borne encephalitis. This work is a milestone in Soviet virology.

BRAZIL

(From Our Regular Correspondent)

SÃO PAULO, Oct. 15, 1945.

The Santonin Test for Liver Function

Dr. Luis C. Fonseca, associate professor of medicine at the University of São Paulo, has published an important paper in which he reviews the question of the santonin test for the examination of the antitoxic function of the liver and presents the results of an experimental study in "normal" men. The complete paper includes the chemical study of santonin, the physiologic problem of the antitoxic function of the liver, the foundation and technic of the test, the preparation of the colorimetric scale and the physiopathology of the test. Dr. Fonseca describes the use of the test on 50 "normal" persons, the laboratory assay of the results in comparison with the results of other tests and a general discussion of the findings. Dr. Fonseca believes, as several other authors do, that the santonin test has been too hastily evaluated as a good device for ascertaining the antitoxic function of the liver.

Dr. Fonseca decided to use 50 nondiseased robust young persons in whom he carefully studied the elimination curve of the oxysantonin. He performed the test with three different technics: with free ingestion of liquids (the original procedure proposed by Moukhtar and Djévat), by giving 100 cc. of water every hour and finally by completing the volume of eliminated urine to 100 cc. if the volume was less than 100 cc. or to 150 cc. if the volume was more than 100 but less than 150 cc. The plotting of two or three curves of elimination for each of the 50 persons studied clearly demonstrated that the degree of the colorimetric scale varies inversely with the dilution of the oxysantonin, thus showing the importance of the volumetric curve, which is closely related to water metabolism. It is easy to conclude that, whenever this metabolism is disturbed, even without the participation of the liver, false results may be obtained with the santonin test. In patients with cirrhosis, particularly the acitogenous cirrhosis, there is a disturbance of water balance. A determination of the antitoxic function of the liver is naturally indicated for a diagnostic and prognostic objective. Dr. Fonseca stresses that this is a paradoxical situation since the conditions present should be considered contraindications to the use of the test. In cases of jaundice with elimination of large amounts of biliary pigments which give a deep color to the urine, the intensely red results of the test are of difficult colorimetric classification. The careful study of the 123 curves obtained by the use of the various technics enables the author to conclude that the elimination greatly varies with the particular technic used.

Hospital News

A new army hospital has been erected at Porto Alegre, state of Rio Grande do Sul. The building is a five story monobloc of reinforced concrete, provided with all the modern facilities, including air conditioning and heating. It cost about a million United States dollars. There are 600 beds distributed in an area of 6,000 square meters (6,562 square yards). The new hospital is under the direction of Lieut. Col. Ismar T. Mutel.

The "Centro de Clinicas do Districto Federal" (Clinical Center of the Federal District) will build a large general hospital in the city of Rio de Janeiro.

The Brazilian Institute of Cancer has decided to build a specialized cancer hospital in the city of Rio de Janeiro. The laying of the cornerstone was an imposing ceremony attended by Dr. Dollinger da Graca, president of the institute, who delivered a speech in which he pointed out the importance of the problem of cancer in Rio de Janeiro and described the main features of the hospital and its services.

A radium and x-ray division has been inaugurated at the Eiras Hospital of Rio de Janeiro under the direction of Dr. Jorge Jabour. Drs. Edgar Drolhe, Ernani Bueno and Pena de Azevedo are in charge respectively of the x-ray, the radium and the pathology services of the division.

The Nossa Senhora das Dores Hospital of Rio de Janeiro has recently inaugurated a radium service, provided with 50 centigrams of radium, acquired in the United States at the cost of $21,000. The hospital is under the direction of Dr. Ary Almeida Silva.

The Rio de Janeiro City administration has appropriated a sum corresponding to $50,000 to improve the São Sebastião Hospital for acute contagious diseases and for similar purposes in the Torres Homem Tuberculosis Hospital.

South American Meeting of Microbiologists and Parasitologists

Dr. Hugo Vaccaro of Chile, Dr. Juan E. Mackinnon of Uruguay and Dr. Carlos S. Lacaz of São Paulo have decided to promote a meeting of South American specialists in microbiology, parasitology and tropical pathology. Among the most important subjects to be discussed at the meeting are American trypanosomiasis, schistosomiasis, jungle yellow fever and South American shigelloses, rickettsioses and blastomycoses. The University of Chile, the Catholic University of Santiago, the Concepción University and the São Paulo Bacteriologic Institute, the Institute of Veterinary Investigations and the São Paulo State Department of Health have already decided to send representatives to the meeting. Drs. Battistini, Hercelles and Colchon from Lima, Peru, Dr. Wandenberg of Quito, Ecuador, Drs. Navarez and Rodrigues from Guayaquil, Dr. Iragorry from Caracas and Drs. Bonilla and Patiño Camargo from Bogotá have promised to take part in the meeting. An organizing committee has been formed, which includes Drs. Juan Noé, Julio San Miguel, Hugo Vaccaro and Carlos Garcez.

The Walter Reed Medal Awarded to the Brazilian Government

The American Society of Tropical Medicine has awarded the Walter Reed Medal to the Brazilian federal government in recognition of the "invaluable work" accomplished by that government in the sphere of preventive medicine. The society likewise awarded a diploma to Hon. Gustavo Capanema, minister of health of Brazil. In forwarding the medal to the Brazilian Department of State, Mr. Carlos Martins, Brazilian ambassador in Washington, pointed out that the award had a special significance for Brazil and its minister of health, since this was a distinction awarded thus far only to the Rockefeller Foundation (1936), to Dr. William B. Castle (1939), to Dr. Herbert C. Clark (1940), and to Dr. Carlos J. Finlay (1942). Minister Capanema presented the medal to the National Museum of History of Rio de Janeiro.

Marriages

ROBERT NORMAN BUCHANAN JR., Hendersonville, Tenn., to Miss Rachel Blackman of Wartrace, in Nashville, September 15.

ROBERT C. POLSON, Lawrence, Kan., to Miss Marjorie Simonson in Santa Barbara, Calif., September 15.

CARLETON DOUGLAS ROWLEY, Walton, N. Y., to Miss Mary Elizabeth Patti of Batavia, September 28.

FORREST J. PINKERTON to Mrs. Florence Helmick Macaulay, both of Honolulu, Hawaii, September 14.

HARRY KIRBY SHIFLER to Miss LuVern Gray, both of Des Moines, August 22.

Deaths

Joseph McFarland ✦ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1889; born in Philadelphia, Feb. 9, 1868; since 1936 emeritus professor of pathology at his alma mater and since 1940 professor of general pathology at the school of dentistry at Temple University; served as professor of pathology at the Woman's Medical College of Pennsylvania, Evans Dental Institute and the Veterinary Medical School of the University of Pennsylvania; professor of pathology and bacteriology at the Medico-Chirurgical College from 1896 to 1916; secretary of the Section on Pathology and Physiology of the American Medical Association from 1901 to 1903 and chairman, 1903-1904 and member of the House of Delegates in 1905 and in 1906; organizer and director of the Mulford Bilogical Laboratory from 1894 to 1900; fellow of the American College of Physicians, College of Physicians of Philadelphia, Academy of Natural Science and the Philadelphia Academy of Stomatology; member of the American Association of Pathologists and Bacteriologists; associate member of the American Society of Clinical Pathologists; major in the medical corps of the U. S. Army during World War I, serving as chief of the laboratory service at Base Hospital, Camp Beauregard, Alexandria, La., at General Hospital number 9, Lakewood, N. J., General Hospital number 14, Fort Oglethorpe, Ga., and director of laboratory instruction in the Medical Officers Training Corps at Camp Greenleaf; consulting pathologist at the Philadelphia General Hospital, Doctors Hospital and the American Oncologic Hospital; author of nine editions of "Pathogenic Bacteria and Protozoa," two editions of "Text-Book of Pathology," five editions of "Biology: General and Medical," "Fighting Foes Too Small to See" and "Surgical Pathology"; co-author of "The Breast"; in 1942 was presented with the 1941 Strittmatter Award of the Philadelphia County Medical Society; died September 22, aged 77, of coronary thrombosis.

Ellsworth Eliot Jr., New York; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; born in New York June 6, 1864; member and past president of the American Surgical Association and the New York Surgical Society; member of the American Medical Association and the Society of Clinical Surgery; served as chairman of the surgical section of the New York Academy of Medicine; a major in the medical corps of the U. S. Army during World War I, serving at Chateau-Thierry, St. Mihiel and the Argonne; for two months, after the armistice, was director of surgery for the American Expeditionary Forces evacuation hospital in France; formerly professor of clinical surgery at his alma mater, where he gave a popular course to medical students known as "Eliot's Quiz"; served as professor of clinical surgery at Cornell University; director of surgery at the Knickerbocker Hospital from 1929 to 1937 and chief of surgery at the Vanderbilt Clinic from 1895 to 1900; author of "Yale in the Civil War"; served on the staffs of Gouverneur Hospital, Northeastern Dispensary, Lawrence Hospital, Bronxville, White Plains (N. Y.) Hospital and the Presbyterian Hospital, where he died November 2, aged 81.

Benjamin Austin Cheney ✦ New Haven, Conn.; Yale University School of Medicine, New Haven, 1890; born in Joliet, Ill., June 10, 1867; past president of the New Haven County Medical Society and the New Haven City Medical Society; member of the Connecticut Academy of Arts and Sciences; fellow of the American College of Surgeons; formerly assistant in obstetrics and gynecology, instructor in obstetrics and gynecology and assistant professor of obstetrics and diseases of women and children at his alma mater; at one time owner of a hospital bearing his name; consulting surgeon, Griffin Hospital, Derby; consulting surgeon and member of the board of governors at the Charlotte Hungerford Hospital, Torrington; member of the medical advisory board of the Neuro-Psychiatric Institute of the Hartford Retreat in Hartford; one of the founders of the Grace Hospital, where he had been chairman of the board until early in 1945, when he became honorary chairman following the merger of the Grace and New Haven hospitals; died in the Grace Hospital October 10, aged 78, of coronary occlusion.

Edward O. Morrow ✦ Canton, Ohio; Starling Medical College, Columbus, 1887; past president of the Stark County Medical Society; a member of the staffs of the Mercy and Aultman hospitals; laid the cornerstone in the winter of 1943 for the new wing to Aultman Hospital as the only surviving physician who had served on the first staff in 1937; when he completed fifty years in the practice of medicine, was honored by the Canton Medical Library Association, of which he was one of the founders; died August 26, aged 80, of coronary sclerosis.

Wilbur Ogden Arnold ✦ West Palm Beach, Fla.; Emory University School of Medicine, Atlanta, 1923; past president of the Palm Beach County Medical Society; served during World War I; on the staffs of the Good Samaritan and St. Mary's hospitals; died August 23, aged 47.

James Meade Atkinson Jr. ✦ Port Huron, Mich.; University of Michigan Medical School, Ann Arbor, 1930; interned at the Mercy Hospital in Jackson; formerly chief resident at the Woman's Hospital in Detroit; died July 24, aged 47.

John Andrew Belch, Syracuse, N. Y.; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1889; formerly on the staff of the Crouse-Irving Hospital; on the staff of the Onondaga General Hospital where he died August 18, aged 82, of general arteriosclerosis.

Howard Spencer Brasted ✦ Hornell, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1914; vice president of the Seventh District Branch of the Medical Society of the State of New York; fellow of the American College of Physicians; on the staffs of the Bethesda Hospital and the St. James Mercy Hospital, where he died August 28, aged 57, of coronary thrombosis.

George A. Clark, Wilkes-Barre, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1885; member of the American Medical Association; served two terms as city physician; died in the Wilkes-Barre General Hospital August 6, aged 83, of carcinoma of the stomach and acute dilatation of the heart.

John Hession Conway ✦ Cheyenne, Wyo.; Bellevue Hospital Medical College, New York, 1892; served as city health officer and county physician; for many years affiliated with St. John's Hospital and the Memorial Hospital of Laramie County; at one time vice president of the Citizens National Bank of Cheyenne; died August 10, aged 74, of coronary thrombosis.

Harrison Taylor Cronk, New York; Bellevue Hospital Medical College, New York, 1894; served during World War I; died in the Bellevue Hospital August 17, aged 74, of angina pectoris.

James Michael Dinnen, Fort Wayne, Ind.; Rush Medical College, Chicago, 1879; member of the House of Delegates of the American Medical Association in 1913 and 1914; for many years chief surgeon for the Nickel Plate Railroad; died August 14, aged 88, of cerebral hemorrhage.

John William Dunn, Safety Harbor, Fla.; St. Louis University School of Medicine, 1905; served during World War I; formerly on the staff of the Lincoln State School and Colony in Lincoln, Ill.; died in the Veterans Administration Facility, Oteen, N. C., August 23, aged 63, of pulmonary tuberculosis.

James Weatherwax Graves, Herkimer, N. Y.; University of Vermont College of Medicine, Burlington, 1908; past president of the Herkimer Academy of Medicine; county coroner and health officer; served during World War I; on the staffs of the Herkimer Memorial Hospital in Herkimer and the Faxton Hospital in Utica; found dead August 23, aged 61, of coronary thrombosis.

Edward Thomas Wade Hall ✦ Weston, W. Va.; University of Maryland School of Medicine, Baltimore, 1885; honorary member of the West Virginia State Medical Association; captain in the medical corps of the U. S. Army during World War I; founded Hall's Hospital at Freemansburg; co-founder of the Weston City Hospital; died October 7, aged 81, of uremia.

James Foster Hasbrouck, Pasadena, Calif.; Columbia University College of Physicians and Surgeons, New York, 1894; also a dentist; formerly professor of exodontia at the New York University Dental School and visiting oral surgeon at the Bellevue Hospital, both in New York; served as trustee of the village of Larchmont, N. Y.; died October 13, aged 75, of heart disease.

Philip Tucker Hodgskin, Rockville Centre, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1927; diplomate of the National Board of Medical Examiners; member of the American Medical Association; died in Lincoln, Neb., July 18, aged 43.

Lawrence Nicholas Host ✦ Detroit; Marquette University School of Medicine, Milwaukee, 1915; served in the medical corps of the U. S. Army during World War I; on the staffs of St. Joseph's Mercy and the Deaconess Evangelical hospitals; died August 23, aged 53, of coronary thrombosis.

Alexander William Jacobs, New York; Columbia University College of Physicians and Surgeons, New York, 1915; specialist certified by the American Board of Radiology, Inc.; member of the American College of Radiology; served in the medical corps of the U. S. Army during World War I; at one time assistant physician at the New York City Cancer Institute; on the staffs of the Sydenham and Lebanon hospitals; died in the Mount Sinai Hospital August 8, aged 52, of leukemia.

Douglas P. A. Jacoby ✠ Newport, R. I.; Starling Medical College, Columbus, 1894; member of the American Academy of Ophthalmology and Otolaryngology; retired from the Rhode Island State Guard as a brigadier general after having served for several years as a colonel in the Newport Artillery Company, which he was instrumental in reorganizing; chief of the eye, ear, nose and throat department of the Newport Hospital, where he had been president of the board of trustees; died August 25, aged 72, of coronary thrombosis.

Joseph J. Jonikaitis ✠ Detroit; Loyola University School of Medicine, Chicago, 1916; on the staff of the Lincoln Hospital; died July 20, aged 60, of heart disease.

Ferdinand Michael Jordan ✠ Rochester, Minn.; University of Pennsylvania School of Medicine, Philadelphia, 1925; a fellow in medicine at the Mayo Foundation from 1926 to 1931; member of the Medical Society of the State of New York; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the National Gastroenterological Association; served on the staff of the Grasslands Hospital in Valhalla, N. Y.; died August 14, aged 43, of uremia and polycystic kidneys.

Fred Covington Jordan, Phoenix, Ariz.; Drake University College of Medicine, Des Moines, 1908; member of the American Medical Association; died July 29, aged 61, of coronary occlusion.

William Frank Long, Sulphur Springs, Texas; University of Tennessee College of Medicine, Memphis, 1915; member of the American Medical Association; city and county health officer; died August 12, aged 52, of virus pneumonia.

Frank Sheridan Lott ✠ Bexley, Ohio; Ohio Medical University, Columbus, 1901; founder and for many years chief of staff of St. Clair Hospital, Columbus; formerly surgeon for the Columbus division of the Pennsylvania Railroad; died July 31, aged 81, of heart disease.

Jonathan Tamblyn Male, Yampa, Colo.; University of Buffalo School of Medicine, 1898; member of the American Medical Association; for many years a druggist; died in the Colorado General Hospital, Denver, July 15, aged 76, of postoperative shock following amputation of the right leg.

Joseph Denegre Martin, New Iberia, La.; Medical Department of Tulane University of Louisiana, New Orleans, 1903; member of the American Medical Association; specialist certified by the American Board of Otolaryngology; served on the faculty of his alma mater and on the staffs of the Southern Pacific Hospital and Touro Infirmary, New Orleans, where he died July 6, aged 66.

Duncan McLean, Sacramento, Calif.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1891; died August 13, aged 88.

CAPT. WALTER F. H. BARTZ
M. C., A. U. S., 1913-1944

CAPT. NEIL MAYNARD BURR
M. C., A. U. S., 1915-1944

LIEUT. (JG) THEODORE R. CURBY
(MC), U.S.N., 1919-1945

KILLED IN ACTION

Walter Frederick Henry Bartz, Youngstown, Ohio; Ohio State University College of Medicine, Columbus, 1939; interned at the Youngstown Hospital; began active duty in the medical reserve corps of the U. S. Army as a first lieutenant on May 5, 1941; promoted to captain on Dec. 24, 1941 of the medical corps, Army of the United States; taken a prisoner when Corregidor fell in 1942; died in the South China Sea Oct. 24, 1944, aged 30, while on board a Japanese prison ship which was sunk.

Neil Maynard Burr, Guide Rock, Neb.; University of Nebraska College of Medicine, Omaha, 1939; interned at the University of Nebraska Hospital in Omaha and served a residency at the Cleveland Clinic Foundation Hospital in Cleveland; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on Nov. 5, 1940; promoted to captain in the medical corps, Army of the United States, on Dec. 31, 1941; trained at Camp Shelby, Miss., with the medical detachment to the 147th Infantry of the 37th division; went to the Philippines in August 1941 and was stationed at Fort McKinley with the 12th medical battalion; captured on Bataan and held prisoner until Sept. 5, 1944; died in the South China Sea Oct. 24, 1944, aged 29, while on board a Japanese prison ship which was sunk.

Theodore Roosevelt Curby, Acting Assistant Surgeon, Lieutenant (jg), U. S. Navy, Houston, Texas; Baylor University College of Medicine, Dallas, Texas, 1944; interned at the Naval Hospital in San Diego; entered the U. S. Navy in March 1944; assigned as medical officer aboard a destroyer in December 1944 and saw combat service in the Iwo Jima and Okinawa campaigns; died in the Asiatic area April 28, aged 26.

Charles Edgar McMehen, Berkley, Mich.; Western University Faculty of Medicine, London, Ont., Canada, 1912; served overseas with the Canadian army during World War I; died in the Harper Hospital, Detroit, July 6, aged 58, of coronary thrombosis.

Arthur George Miller ✠ Hobart, Ind.; Loyola University School of Medicine, Chicago, 1922; served in France during World War I; on the staffs of the Methodist and St. Mary's Mercy hospitals in Gary and the Porter Memorial Hospital in Valparaiso; served as deputy county coroner and health officer of Hobart; died August 2, aged 52, of coronary thrombosis

William Franklin Simmons, Gilmore, Ark. (licensed in Arkansas in 1903); died August 29, aged 72, of chronic nephritis.

Carroll Smith ✠ St. Louis; Rush Medical College, Chicago, 1904; professor of surgery at St. Louis University School of Medicine; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; on the staffs of St. Mary's, St. John's and Alexian Brothers' hospitals; died in University City September 6, aged 67.

Mabel Simis Ulrich, Minneapolis; Johns Hopkins University School of Medicine, Baltimore, 1901; formerly regional director of the American Red Cross for Minnesota, the Dakotas and Montana; member of the state board of health and city board of public welfare; on the editorial staff of the *Journal-Lancet;* died in Otisville, August 12, aged 69, when she accidentally fell from a cliff.

Gordon Fitzhugh West ✠ Camden, N. J.; Jefferson Medical College of Philadelphia, 1919; fellow of the American College of Surgeons; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; president of the Camden County Medical Society; on the staff of the Cooper Hospital, where he died July 26, aged 52, of coronary thrombosis.

Vincent Hugh Williams, Owego, N. Y.; Syracuse University College of Medicine, 1927; interned at the Binghamton City Hospital in Binghamton, where he served a residency; died August 27, aged 43, of auricular fibrillation, chronic cardiac valvular disease and hypertension.

George Lamont Wright, Syracuse, N. Y.; Syracuse University College of Medicine, 1911; member of the American Medical Association; instructor in clinical surgery at his alma mater; served as president of the International Association of Fire and Police Surgeons and Medical Directors of Civil Service Commissions; surgeon for the city fire department; associate surgeon of St. Joseph's Hospital; died July 22, aged 59, of cerebral hemorrhage.

LIEUT. COL. WILLIAM RINEY CRAIG
M. C., U. S. A., 1896-1944

LIEUT. ERNEST DANIEL WENBERG
M. C., A. U. S., 1916-1944

CAPT. BILLY TRUE WICKENS
M. C., A. U. S., 1913-1944

Walter John Smith, Columbus, Ohio; Medical College of Ohio, Cincinnati, 1902; served during World War I; chief of the division of communicable diseases, state board of health; died August 16, aged 67.

KILLED IN ACTION

William Riney Craig ✠ Lieutenant Colonel, M. C., U. S. Army, Washington, D. C.; Vanderbilt University School of Medicine, Nashville, Tenn., 1926; fellow of the American College of Surgeons; received his commission in the U. S. Army in 1926; promoted to the temporary rank of lieutenant colonel on Dec. 19, 1941; from 1926 to 1929 served at the William Beaumont General Hospital in El Paso, Texas; attended the Army Medical School and Field Service School for one year; later stationed at Gorgas Hospital in Panama Canal Zone and Fort Sam Houston General Hospital in Fort Sam Houston; commanding officer of the hospital at Fort Douglas, Utah, before going to the Philippines in January 1941; chief of the surgical service at Sternberg General Hospital in Manila at the time of the Japanese attack on the Philippines; served as executive officer of the 7,000 patient hospital number 2 on Bataan and was a survivor of the Bataan death march and medical officer in charge during the two and a half years he was imprisoned at Cabanatuan; awarded the Purple Heart posthumously; killed in Subic Bay, Luzon, P. I., Dec. 15, 1944, aged 48, when a Japanese vessel on which he was being transported was bombed and sunk.

Ernest Daniel Wenberg, West De Pere, Wis.; University of Wisconsin Medical School, Madison, 1942; interned at Colorado General Hospital in Denver; began active duty as a first lieutenant in the medical corps, Army of the United States, on Feb. 21, 1944; killed in action in Stalag Dec. 23, 1944, aged 28, while a prisoner of war of Germany.

Billy True Wickens, Strawn, Texas; University of Texas Medical Branch, Galveston, 1940; served a residency at the John Sealy Hospital in Galveston and an internship at the Scott and White Hospital in Temple, Texas; began active duty as a first lieutenant in the medical corps, Army of the United States, on May 30, 1942; promoted to captain; died in the European area Nov. 5, 1944, aged 31, of wounds received in action.

Correspondence

CLAVACIN

To the Editor:—The editorial on clavacin in THE JOURNAL, September 22, in which it is suggested that this antibiotic be used in local ringworm infections, is of great interest. I have for some time been using streptothricin (antibiotic from Actinomyces lavendulae-Waksman 1942) for mild interdigital epidermophytosis in which the objective symptoms consist only of scaling with or without fissuring, in the following formula:

Streptothricin	5,000 units
Triethanolamine	0.2 cc.
Greaseless base (Burroughs Wellcome)	30.0 cc.

If the streptothricin ointment is used in the condition indicated, the scaling and fissuring disappears in four or five days and the skin will continue to remain smooth as long as the streptothricin ointment is used. Lapse in the use of the ointment is followed by gradual return of the scaling, thus indicating fungistatic but partial or no fungicidal activity. The nature of this application indicates probable lack of local sensitizing and certainly nonirritating properties and for this reason should be the preferable one for the mild types of interdigital epidermophytosis seen in diabetic patients, in whom irritating as well as sensitizing chemicals are best avoided. The ointment, without streptothricin, is of no value.

SIGMUND S. GREENBAUM, M.D., Philadelphia.

TETANUS IMMUNIZATION

To the Editor:—One of the problems concerning returned servicemen which should be brought to the attention of all civilian physicians is the administration of prophylactic doses of tetanus antitoxin.

I recently saw a discharged veteran who suffered a minor laceration of the thumb in an industrial accident. A physician administered 1,500 units of tetanus antitoxin, which was followed in four days by a moderately severe local and systemic serum reaction, causing a loss of three days' working time in addition to that attributable to the original injury. This patient had seen overseas duty and had received the initial tetanus toxoid immunization and subsequent stimulating doses. At the time of his injury he should have been given 1 cc. of tetanus toxoid. The injection of tetanus antitoxin and the subsequent incapacitating reaction were entirely unnecessary. Tetanus toxoid causes little or no reaction.

The record of tetanus toxoid immunization appears on the service discharge papers which most veterans carry on their person. I believe that overseas duty is invariably evidence of tetanus toxoid immunization. In any case, a man should be questioned concerning tetanus toxoid immunization in the service before being given tetanus antitoxin.

ABRAHAM FREEDMAN, Major, M. C., A. U. S.

PAROXYSMAL TEMPORAL HEADACHE

To the Editor:—Referring to Dr. S. B. Nadler's article on "Paroxysmal Temporal Headache" (THE JOURNAL, September 29, p. 334), I wish to call attention to my experience with 4 cases during the past year. Each case presented the clinical picture of paroxysmal hemicephalalgia as described by Dr. Nadler, with the major distribution in the temporal area. The pain was dramatically relieved by procaine infiltration of the great occipital nerve at a point corresponding to the point of maximum tenderness in the suboccipital area on the same side. Pain in each case was permanently relieved without any surgical intervention or arterial section.

DAVID A. NEWMAN, M.D., West Palm Beach, Fla.

ROENTGEN'S LABORATORY

To the Editor:—It has occurred to me that it would be a matter of interest to physicians in general, as well as to radiologists in particular, to know something of the present condition of Roentgen's laboratory in Würzburg, Bavaria. No doubt many have wondered about its fate as I did when I read last April of the push by our armies in that direction toward Nuremberg. The city was bombed and largely reduced to rubble by incendiaries plus high explosives and fought over as well, but fortunately for the mementoes of Roentgen the Physical Institute of the university which houses his laboratory and historical collection escaped with only minor damage such as shattered windows, broken slate and loosened plaster.

I have visited the institute several times this summer and am happy to report that on the hundredth anniversary of Roentgen's birth, and the fiftieth of his great discovery, the scenes of his research, as well as the apparatus he employed, remain undamaged for him who would journey there to see them.

LEWIS E. ETTER, Major, M. C., A. U. S.,
115th General Hospital, A. P. O. 758.

CITATION FOR 20TH GENERAL HOSPITAL

To the Editor:—There have been numerous inquiries which I have received about the statement on page 621 of THE JOURNAL, October 27, concerning the 20th General Hospital. The statement should have read that the 20th General Hospital was recently commended, the citation being addressed to Brig. Gen. I. S. Ravdin from the then commanding general of the India-Burma theater, Lieut. Gen. Dan. I. Sultan: "Under extremely difficult climatic conditions and in an area devoid of practically everything usually considered necessary for the construction and operation of a general hospital, you have built an institution that has been complimented by every one who has visited it. The record of the 20th General Hospital would be outstanding in any theater of operations. Much of this achievement can be attributed to your fine qualities of leadership, but your officers, including your nurses and all of your men, have shown a devotion to duty which is worthy of the highest praise."

I. S. RAVDIN, M.D., Philadelphia.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, Dec. 1, page 980.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various Centers, Feb. 4-6. Part III. Various Centers, March. Exec. Sec., Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF DERMATOLOGY & SYPHILOLOGY: *Written. Group B.* April 22. *Oral. Group A and B.* June 6-8. Final date for filing application is March 1. Sec., Dr. George M. Lewis, 66 E. 66th St., New York 21.

AMERICAN BOARD OF NEUROLOGICAL SURGERY: *Oral.* Chicago, May 27. Final date for filing application is Feb. 1. Sec., Dr. P. C. Bucy, 912 S. Wood St., Chicago 12.

AMERICAN BOARD OF OPHTHALMOLOGY: Chicago, Jan. 18-22 and Los Angeles, Jan. 28-Feb. 1. Sec., Dr. S. Judd Beach, 56 Ivie Rd., Cape Cottage, Me.

AMERICAN BOARD OF OTOLARYNGOLOGY: Spring 1946. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PSYCHIATRY & NEUROLOGY: *Oral.* New York, Dec. 20-22. Chicago, May 24-25. Final date for filing application is February 1946. Sec., Dr. Walter Freeman, 1028 Connecticut Ave., N. W., Washington 6, D. C.

AMERICAN BOARD OF UROLOGY: *Written.* Various centers, Dec. 9. *Oral.* Chicago, February 1946. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

POSTGRADUATE CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

Compiled by the Council on Medical Education and Hospitals for Period Jan. 1, 1946 to July 15, 1946

Medical schools, hospitals, state medical societies and other medical educational institutions and organizations are providing the Council with a growing body of information on courses designed primarily to meet the needs of returning medical officers. These have been incorporated into the lists on these pages. They are not specifically designated for veterans, since most if not all of them may also be open to interested civilian physicians. Furthermore, all courses listed which were not designed primarily for physician veterans are also open to qualified returning medical officers.

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Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ALLERGY (See also Dermatology and Syphilology)			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Allergy	1 month, monthly	$200
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital and Boston Dispensary	Allergy	May 13-17, 1946, 1 week	Registration 5 Tuition 25
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Kings County Hospital	Allergy	April 6, 1946, 8 weeks	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Recent Advances in Allergy	March 11-15, 1946, 5 days	30
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Allergy	Jan. 4-Feb. 15, 1946, 2 months	25
	Allergy	April 1-19, 1946, 3 weeks full time	200
	Symposium on Allergy	Jan. 7-11, 1946, 5 days, full time	100
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Allergy	2 months, arranged	50
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Allergy	Not determined	Members 20 Non-Members 40 Physicians in service free
Vaughan Memorial Clinic, 201 W. Franklin St., Richmond, Va.	Fellowship in Allergy	6 months to 1 year, beginning Jan. 1 and July 1 each year	None
ANATOMY			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Surgical Anatomy on Cadaver	2 weeks, beginning Feb. 11, March 11, April 8, May 6, June 3, July 15	125
Indiana University School of Medicine, 1040 West Michigan St., Indianapolis 7	Course in Basic Sciences of Anatomy, Physiology and Pathology	6 months, tentative	Not stated
University of Michigan Medical School, Department of Post-graduate Medicine, 1313 East Ann St., Ann Arbor, Mich.	Anatomy	Feb. 28-June 6, 1946, once weekly	30
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Advanced Dissection	Arranged	20
	Advanced Histology	Arranged	20
	Regional Dissection	10 weeks, arranged	20
	Evolution of the Human Body	1 quarter, arranged	10
Creighton University School of Medicine, 306 N. 14th St., Omaha	Anatomy	Arranged	G. I. Bill of Rights and free
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Applied Anatomy of the Head and Neck	160 hours, arranged	300
	Applied Anatomy of the Ear, Nose and Throat	80 hours, arranged	275
	Applied Anatomy of the Lower Extremity	60 hours, arranged	115
	Applied Anatomy for the Orthopedic Surgeon	160 hours, arranged	275
	Applied Anatomy for the Anesthetist	100 hours, arranged	275
	Applied Anatomy of the Thorax	120 hours, arranged	275
	Applied Anatomy of the Urogenital System	160 hours, arranged	295
	Applied Anatomy of the Upper Extremity	60 hours, arranged	115
	Applied Anatomy of the Abdomen	130 hours, arranged	either sex 300 both sexes 500
Duke University School of Medicine, Durham, N. C.	Anatomy	Full time, quarterly	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Anatomy	Arranged	25

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ANESTHESIOLOGY (See also Obstetrics and Gynecology)			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C. At: Various hospitals	Intensive Refresher Course in Anesthesiology	1 week, April 8-13	$ 50
University of Georgia School of Medicine, University Place, Augusta, Ga. At: University Hospital	General Anesthesia (Inhalation and Intravenous)	2 weeks, arranged	150
	Regional Anesthesia	2 weeks, arranged	150
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Inhalation Anesthesia	1 month, every month	200
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Anesthesia	2 weeks, arranged	100
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Applied Anesthesia	3 months, arranged	Not stated
	Anesthetic Technic	6 weeks, arranged	Not stated
	Regional Anesthesia	12 sessions, arranged	75
			Half fee for physicians in service
	Regional, Spinal, Etc., Anesthesia	3 months full time	300
			Half fee for physicians in service
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Anesthesia	6 months to 1 year, Spring 1946	350
Duke University School of Medicine, Durham, N. C.	Anesthesia	3 or 6 weeks, arranged	None
University of Texas School of Medicine, Galveston, Texas	Anesthesiology	3 to 6 weeks, arranged	Arranged
ARTHRITIS			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Arthritis	April 17, 1946, 8 sessions	20
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Arthritis and Allied Rheumatic Disorders	Jan. 8-Feb. 26, 1946, 2 months, part time	45
	Arthritis and Allied Rheumatic Disorders	March 18-22, 1946, 5 days, full time	45
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Arthritis and Rheumatic Disorders	6 weeks, arranged	100
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Arthritis	Not determined	Members 20 Non-Members 40 Physicians in service free
BACTERIOLOGY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Immunology and Virology	Jan. through March 1946	10
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Clinical Bacteriology and Serology	Jan. 2-Jan. 31, 1946, 1 month, part time	100
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Pathology and Bacteriology	9 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Bacteriology and Parasitology	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Bacteriology and Immunology	Arranged	Approximately 25
BIOCHEMISTRY			
Creighton University School of Medicine, 306 N. 14th St., Omaha	5 Lectures on Recent Developments in Biochemistry	Arranged	G. I. Bill of Rights and free
Duke University School of Medicine, Durham, N. C.	Biochemistry	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Biochemistry	Arranged	Approximately 25
CARDIOVASCULAR DISEASES (See also Electrocardiography)			
College of Medical Evangelists, 312 Boyle Ave., Los Angeles At: White Memorial Hospital	Cardiology	March 4, 1946, 12 weeks, once weekly	24
University of Georgia School of Medicine, University Place, Augusta, Ga.	Cardiology	2 weeks, arranged	150
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital	Cardiology	April 29-May 3, 1946, 1 week	Registration 5 Tuition 25
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann St., Ann Arbor, Mich. At: University of Michigan Hospital	Diseases of the Heart	Spring 1946, 3 days	15
	Diseases of the Blood and Blood Forming Organs	Spring 1946, 5 days	25
Creighton University School of Medicine, 306 N. 14th St., Omaha	Cardiovascular Renal Diseases	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Israel Zion Hospital	Peripheral Vascular Diseases	April 9, 1946, 8 weeks	20
	Clinical Cardiology	April 16, 1946, 8 sessions	20
At: Jewish Hospital	Bedside Clinical Cardiology	15 sessions, April 9, 1946	20
	Hypertension and Nephritis	April 17, 1946, 8 weeks	20
At: Kings County Hospital	Heart Diseases in Childhood	April 12, 1946, 10 sessions	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital	Elementary Clinical Cardiology	March 19-June 4, June 4-Aug. 13, 1946, part time	50
	Supplementary Clinical Cardiology	Jan. 8-March 19, 1946, 2½ months, part time	50
	Advanced Clinical Cardiology	Jan. 8-June 6, 1946, 5 months, part time	100
At: Mount Sinai Hospital	Comprehensive Course in the Elements of Cardiovascular Diseases	April 1-June 19, 1946	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Diagnosis and Treatment of Diseases of the Heart	8 weeks, part time, arranged	75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Cardiology	20 hours, arranged	150
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Cardiovascular Diseases	Spring 1946, 3 months, part time	Veterans 50 Civilians 75
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Cardiology	Not determined	Members 20 Non-Members 40 Physicians in service free
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottsford Road, Philadelphia 29	Clinical Cardiology	2 weeks, arranged	100
Meharry Medical College, 1005-18th Avenue North at Hefferman St., Nashville, Tenn.	The Diagnosis and Treatment of Common Cardiovascular Diseases	2 weeks, Jan. 1946	35

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
CHEMISTRY			
Duke University School of Medicine, Durham, N. C.	Seminars in Clinical Chemistry	10 to 12 weekly seminars, arranged	None
	Practical and Theoretical Instruction in Clinical Chemistry	3 months, arranged	None
CHEST DISEASES (See also Anatomy, Medicine and Radiology)			
California Tuberculosis Association, 45 2d St., San Francisco At: University of California and Stanford University Hospitals	Postgraduate Instruction in Diseases of the Chest	Arranged	None
State Sanatorium, Sanatorium, Miss.	Chest Diseases and Internal Medicine	2 to 6 weeks, entire year	None
Creighton University School of Medicine, 306 N. 14th St., Omaha	Diseases of the Chest	Arranged	G. I. Bill of Rights and free
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Acute and Chronic Diseases of the Chest	Jan. 3-Feb. 28, 1946, 2 months, parttime	45
	Acute and Chronic Pulmonary Diseases	May 20-24, 1946, 5 days, full time	45
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York At: Metropolitan Hospital Division	Diseases of the Respiratory System	1 month, arranged	150
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Chest Diseases	Not determined	Members 20 Non-Members 40 Physicians in service free
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottsford Road, Philadelphia 29	The Tuberculosis Problem	Beginning Oct. 1945, weekly lectures, arranged	per lecture 3
DERMATOLOGY AND SYPHILOLOGY (See also Medicine)			
College of Medical Evangelists, 312 Boyle Ave., Los Angeles At: White Memorial Hospital	Dermatology	Feb. 4, 1946, 10 periods, once weekly	20
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Lecture and Clinical Course in Dermatology	April 8, May 20, June 17, 2 weeks	100
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Dermatology B	April 1-5, 1946, 1 week	Registration 5 Tuition 25
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Clinic and Conference in Dermatology and Syphilology	Arranged, part time, 10 weeks	20
At: Receiving Hospital	Inflammatory Diseases of the Skin	Arranged, part time	25
Creighton University School of Medicine, 306 N. 14th St., Omaha	Dermatology	Arranged	G. I. Bill of Rights and free
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Venereal Diseases, Syphilis, Gonorrhea, Lymphogranuloma Venereum, Chancroid and Granuloma Inguinale	Feb. 7-March 28, 1946, 8 weeks	25
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Diagnosis and Treatment of Syphilis	Arranged, 6 weeks or 3 months	6 weeks 30 3 months 50
	Clinical Dermatology and Syphilology	Arranged, 6 weeks or 3 months	6 weeks 50 3 months 85
	Dermatology and Syphilology for Pediatricians	Feb. 6-April 24, 1946, part time	100
	Symposium on Dermatology and Syphilology	May 13-18, 1946	90
	Symposium on Industrial Dermatology	June 17-21, 1946	75
	Review of Dermatological Histopathology	1 month, May 1-31, 1946	75
	Seminar in Practical Dermatology and Syphilology	April 29-May 4, 1946	50
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Dermatology and Syphilology	6 weeks, 1st of any month part time	50 Half fee to physicians in service
	Syphilology	6 weeks, arranged	100
	Dermatology and Syphilology	3 months, part time, 1st of any month	Half fee to physicians in service
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Dermatology	Spring 1946, 4 weeks, part time	25
At: Bellevue Hospital	Syphilis	Arranged, 1 week	Veterans 15 Civilians 25
	Occupational Dermatoses	Arranged, 1 week	As above
	Common Dermatoses	Arranged, 4 weeks	Veterans 50 Civilians 75
DIABETES			
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: New England Deaconess Hospital	Diabetes Mellitus in Relation to General Medicine	April 1-3, 1946	20
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital and Boston Dispensary	Diabetes	Jan. 14-19, 1946, 1 week	Registration 5 Tuition 25
Creighton University School of Medicine, 306 N. 14th St., Omaha	Diabetes	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Diabetes	April 18, 1946, 8 weeks, part time	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Recent Advances in Diabetes Mellitus and Hyperinsulinism	Feb. 4-9, 1946, 6 days	35
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Diabetes Mellitus, Nephritis and Hypertension	Jan. 3-Feb. 28, 1946, 2 months part time	45
	Diabetes Mellitus, Nephritis and Hypertension	April 8-12, 1946, 5 days, full time	45
ELECTROCARDIOGRAPHY			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Electrocardiography and Heart Disease	1 month, 1st of each month, Feb.-June	175
Michael Reese Hospital, 29th St., and Ellis Ave., Chicago 16	Electrocardiographic Interpretation	Feb. 13-May 2, 1946	25
Tufts Medical School, Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital	Electrocardiography	May 13-17, 1946, 1 week	Registration 5 Tuition 25
	Advanced Electrocardiography	Jan. 21-23, 1946, 3 days	As above

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ELECTROCARDIOGRAPHY—Continued			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Electrocardiography	Jan. through March 1946, part time	$ 10
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Electrocardiography Electrocardiography and Clinical Cardiography	April 15, 1946, 5 weeks, part time April 9 1946, 5 weeks, part time	20 20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital	Elementary Electrocardiography Supplementary Electrocardiography Advanced Electrocardiography	March 21-June 6; June 6-Aug. 15, 1946 Jan. 3-March 14, 1946 Jan 3-March 14; March 21-June 6, 1946	35 35 35
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Electrocardiography	June 3-7, 1946, 5 days, full time	50
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Electrocardiographic Interpretation	2 weeks, part time, arranged	75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Electrocardiography	15 hours, arranged	150
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Electrocardiography	Spring 1946, 10 weeks, part time	35
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Electrocardiography	May 20-24, 1946	50
ELECTROENCEPHALOGRAPHY			
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Electroencephalography	Arranged, 3 weeks	50
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Clinical Electroencephalography	Jan. 14-19, 1946	60
University of Texas, 912 Avenue B, Galveston, Texas	Electroencephalography	Arranged	Arranged
ENDOCRINOLOGY			
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital	Endocrinology	May 20-24, 1946, 1 week	registration 5 tuition 25
University of Michigan Medical School, Department of Postgraduate Education, 1313 East Ann St., Ann Arbor, Mich.	Endocrinology and Metabolism	Spring 1946, 3 days	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Carbohydrate Metabolism Endocrinology of Reproduction	Jan. thr. March 1946, part time Spring 1946, 1 quarter	5 10
Creighton University School of Medicine, 306 N. 14th St., Omaha	Endocrinology	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital At: Long Island College Hospital	Female Sex Endocrinology Endocrine Diseases and Disorders in Children and Adolescents	April 16, 1946, part time April 15, 1946	20 20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Endocrinology	2 weeks, arranged	100
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Diseases of Metabolism	Feb. and March 1946, 2 months, part time	75
ENDOSCOPY			
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Practical Cystoscopy	2 weeks, every 2 weeks	150
FRACTURES			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Kings County Hospital	Fractures	April 5, 1946, 10 sessions	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Fractures and Allied Trauma	Arranged	with group 150
GASTROENTEROLOGY			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles At: White Memorial Hospital	Gastroenterology	Feb. 4, 1946, 12 periods	24
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Personal Course in Gastroscopy and Gastroenterology	April 22, June 3, 1946	200
University of Michigan Medical School, 1313 East Ann St., Ann Arbor, Mich. At: University of Michigan Hospital	Gastroenterology	Spring 1946, 5 days	25
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Gastroenterology Clinic	Spring 1946, 3 months	Pract. Physicians 5 Residents 2
Creighton University School of Medicine, 306 N. 14th St., Omaha	Gastroenterology	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Greenpoint Hospital	Gastroenterology	April 16, 1946, 6 weeks, part time	20
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Gastroenterology Gastroenterology	Jan. 2-Feb. 27, 1946, 2 months, part time March 25-April 5, 1946, 10 days, full time	45 75
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Columbia-Presbyterian Medical Center	Gastroscopy	Arranged, 2 months, part time	250
At: Montefiore Hospital	Clinical Gastroenterology	Feb. 7-April 11, 1946, 2 months, part time	35
At: Mount Sinai Hospital	Comprehensive Gastroenterology	April 1-June 19, 1946, 12 weeks	75
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Peritoneoscopy Gastroenterology	Arranged 1 month, arranged	100 100
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Proctology and Gastroenterology (Clinical) also Cadaver Proctology Gastroenterology	1 month, arranged April 1, 1946 6 weeks part time, Jan. 2, April 1, 1946	100 Half fee to physicians in service 50 Half fee to physicians in service

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
GASTROENTEROLOGY—Continued			
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Clinical Gastroenterology	Spring 1946, 5 months, part time	$100
At: Beth Israel Hospital	Gastroenterology	Jan. 4 to Feb. 25, 1946, 8 weeks part time	50
At: Lennox Hill Hospital	Gastroenterology	Jan. 1946, 7 weeks, part time	50
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Gastro-Intestinal Disease	5 days full time, Feb. 25-March 1, 1946	50
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Gastroenterology	Not determined	Members 20 Non-Members 40 Physicians in service free
HEMATOLOGY (See also Pathology)			
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Hematology C	Announced for 1946	75
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving Hospital	Hematology Clinic	Spring 1946	Pract. Physicians 5 Residents 2
Creighton University School of Medicine, 306 N. 14th St., Omaha	Hematology	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Clinical Hematology	April 18, 1946, 8 weeks, part time	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Clinical Hematology (Advanced Course)	Feb. 4-March 28, 1946, 8 weeks	50
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Hematology	1 month, arranged	100
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital	Hematology	Jan. 1946, 6 weeks, part time	25
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Hematology	Not determined	Members 20 Non-Members 40 Physicians in service free
INDUSTRIAL HEALTH			
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	4th Postgraduate Course in Industrial Medicine	Jan. 14-Feb. 1, 1946	75 per week 25
Wayne University School of Occupational Health, 4072 Penobscot Bldg., Detroit 26	Occupational Health and Medicine	Jan. 7, 2 weeks, full time	Not stated
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Symposium on Industrial Medicine	June 17-21, 1946, 5 days, full time	45
University of Texas School of Medicine, 912 Avenue B., Galveston, Texas	Industrial Medicine	March 1946, tentative	Not stated
LEGAL MEDICINE			
New York University College of Medicine, 477 First Ave., New York 16	Courses in Forensic Medicine	Variable, Oct. thru June	variable
Duke University School of Medicine, Durham, N. C.	Legal Medicine	3 months or longer, arranged	None
MEDICINE, GENERAL (See also Chest Diseases, Electrocardiography, Gastroenterology, Obstetrics and Gynecology, Neurology and Psychiatry and Surgery)			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles At: White Memorial Hospital	General Medicine	Feb. 5, 1946, 12 periods	24
	Varicose Veins	April 4, 1946, 6 hours	12
University of California Medical School, Medical Center, San Francisco 22	General Medical Course	12 weeks beginning June 1, 1946	200
Research Study Club of Los Angeles, Inc., 727 W. 7th St., Los Angeles	15th Annual Midwinter PG Clinical Course	2 weeks, Jan. 20-Feb. 5, 1946	50 Free to physicians in service
California Medical Association, 450 Sutter St., San Francisco 8 At various cities.	Regular P. G. Program	Throughout year	None
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course, Internal Medicine	4 to 6 weeks, Feb. 11-March 9 or 23, 1946	$150 to 225 G. I. Bill of Rights
	Intensive General Review Course	9 weeks, Feb. 11-April 13, 1946	225 G. I. Bill of Rights
	Intensive Refresher Course in Infectious Diseases	2 weeks, March 11-23, 1946	75 G. I. Bill of Rights
Emory University School of Medicine, 50 Armstrong St., Atlanta, Ga.	General Internal Medicine	12 weeks, Jan. 13-April 6, 1946	250
University of Georgia School of Medicine, University Place, Augusta, Ga. At: University Hospital	General Medicine and Surgery	1 week, June 1946	None
	Postgraduate Course for Negro Physicians	1 week, last half of June 1946	None
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Internal Medicine	2 weeks, Feb. 18, April 8, May 13, June 17, 1946	75
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Refresher Course for Ex-Military Personnel	3 months, every 3 months	residents 75 nonresidents 100
	Refresher Course for General Practice	Arranged, 3 months	Ill. physicians 75 nonresidents 100
Indiana University School of Medicine, 1040 W. Michigan St., Indianapolis 7 At: University and City Hospitals	Extern work	3 to 6 months, tentative	not stated
	General Review of General Medicine	Arranged, tentative	not stated
State University of Iowa, College of Medicine, University Campus, Iowa City	General Medicine	Jan. 14-April 6, 1946	100
At: University Hospitals	Operation of Blood Transfusion Services	Feb. 4-March 2, 1946, 1 month	50
	Informal Refresher Courses	Arranged	None
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 13	General Refresher Course	March 18-May 25, 1946 1 week or more	per week 25
Maine Medical Association, 177C Main St., Waterville, Maine At: Boston	Refresher Course	1 to 2 weeks, arranged	Arranged
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Clinical Medicine	Continuously, 4 weeks	registration 5 tuition 25
	Internal Medicine	May 6-31, 1946	registration 5 tuition 50
University of Michigan Medical School, 1313 Ann St., Ann Arbor, Mich. At: 9 centers in Michigan	Extramural Course	Spring 1946	None
At: University Hospital	Common Problems in Differential Diagnosis	Spring 1946, 3 days	15
	Recent Advances in Therapeutics	Spring 1946, 3 days	15
	Clinical Applications of the Basic Sciences	Jan. and Feb. 1946, 2 months	per month 30
	Clinical Exercises for Practitioners	Arranged	per month 30
	Course for Practitioners	May-June 1946	per month 30
	Internal Medicine	March-April 1946	per month 30

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Physical Medicine	Arranged, part time	$10
At: Eloise Hospital	Seminar in Medicine	1 quarter, arranged	5
	Diagnostic Conference	1 quarter, arranged	Not stated
At: Receiving Hospital	Diagnostic Conference	1 quarter, arranged	Not stated
	Medical Pathological Conference	1 quarter, arranged	Pract. Physicians 5 Residents 2
	Therapeutic Conference	1 quarter, arranged	As above
	Ward Rounds and Conferences	10 weeks, arranged, part time	5
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in Medicine	Jan. 7-March 30, 1946, 3 months	150
	Continuation Course in Basic Sciences	April 8-June 29, 1946, 3 months	150
State Sanatorium, Sanatorium, Miss.	Chest Diseases and Internal Medicine	2 to 6 weeks, throughout year	None
Creighton University School of Medicine, 306 N. 14th St., Omaha	Special Courses	Individually arranged	G. I. Bill of Rights and free
	Clinical Basic Science Conference	Arranged	G. I. Bill of Rights and free
	Preceptorship	Individually arranged	G. I. Bill of Rights and free
	General Medicine	Arranged	G. I. Bill of Rights and free
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Greenpoint Hospital At: Israel Zion Hospital	Sterility	April 9, 1946, 12 sessions	20
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Gynecological Pathology	April 2, 1946, 12 sessions	50
	Bedside Clinics in Diseases of Liver and Gallbladder	Feb. 6-March 27, 1946	35
	Geriatrics, Disease in the Aged	Feb. 7-March 28, 1946, 8 weeks	25
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Cardiology	Jan. 7-Feb. 25, 1946, 2 months, part time	45
	Cardiology	May 13-17, 1946, 5 days, full time	45
	Cardiology	April 15-May 10, 1946, 4 weeks full time	125
	Combined Course in Internal Medicine	March 4-May 24, 1946, 12 weeks, full time	350
	Diseases of the Thyroid and Other Endocrine Glands and Nutrition	Jan. 4-Feb. 15, 1946, 2 months part time	45
	Diseases of the Liver and Biliary Tract	Jan. 2-Feb. 27, 1946, 2 months, part time	90
	Peripheral Vascular Diseases	May 13-17, 1946, 5 days, full time	45
	Peripheral Vascular Diseases	Jan. 8-Feb. 26, 1946, 2 months part time	90
	Problems in Diagnosis	Jan. 7-Feb. 25, 1946, 2 months, part time	45
	Psychological Aspects of Internal Medicine	Jan. 4-Feb. 15, 1946, 2 months part time	25
	Seminar in Internal Medicine	Jan. 2, 1946, 2 months	1 month 125 2 months 225
	Symposium on Internal Medicine	June 17-28, 1946, 10 days, full time	10 days 75 5 days 45
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York At: Metropolitan Hospital Division	Diseases of the Liver and Biliary System	1 month, arranged	100
	Peripheral Vascular Diseases	2 weeks, arranged	150
	Physical Diagnosis	1 month, arranged	150
	Internal Medicine	1 month, arranged	150
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Blood Transfusions	Arranged	Not stated
	General Course in Physical Medicine	4 weeks, part time, arranged	100 Half fee for physicians in service
	Course for General Practitioners	6 weeks, arranged	100 Half fee to physicians in service
	Course for General Practitioners	3 months, arranged	200 Half fee to physicians in service
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	General Review for General Practitioners	3 months, arranged	Veterans 175 Civilians 225
	Genito Infectious Diseases	Arranged, 1 week	Veterans 15 Civilians 25
	Internal Medicine	1st of each month, 1 month	50
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Medicine	9 months minimum	Not stated
	Refresher Courses (2)	6 weeks	Not stated
	Refresher Courses (6)	3 months minimum	Not stated
Duke University School of Medicine, Durham, N. C. At: Duke Hospital	Medicine	3 months or longer, arranged	None
	General Medicine	1 or 2 weeks or longer arranged	None
Ohio State University, College of Medicine, 11th and Neil Aves., Columbus 10	Postgraduate Continuation Studies	Arranged, 2 weeks to 3 months	per week 15
Western Reserve University School of Medicine, 2109 Adelbert Road, Cleveland 6 At: University Hospitals	Refresher Course for Physicians	3 months, arranged	150
University of Oregon Medical School and Hospital, Marquam Hill, Portland 1	General Refresher Course	Individually arranged	per month 75
	General Informal Review	Individually arranged	per month 75
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	General Medicine	Not determined	Members 20 Non-Members 40 Physicians in service free
	Internal Medicine	Not determined	As above
University of Pennsylvania, 237 Medical Laboratories, Philadelphia 4	Refresher Course	12 weeks, arranged	175
University of Pittsburgh School of Medicine, Bigelow Blvd., Pittsburgh	Refresher Course for General Practitioners	8 weeks, arranged	150
University of Tennessee College of Medicine, 874 Union Ave., Memphis, Tenn.	Refresher Course in Medicine	1 quarter—11 weeks, beginning Dec. 31, 1945	120
Baylor University College of Medicine, 500 Lincoln Ave., Houston, Texas	Refresher Course in General Medicine	Jan. 7-April 13, 1946; 14 weeks	150
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	General Internal Medicine	Spring 1946, 3 days	12.50
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Medicine	2 months, arranged	75
University of Vermont College of Medicine, Pearl St., College Park, Burlington, Vt.	General Practice, Internal Medicine	1 to 9 months, beginning of each month	per year 500 pro rated
Medical College of Virginia, 12th and Marshall Sts., Richmond, Va.	Refresher	2 weeks, March 1946	Not stated
	St. Philip Hospital Postgrad. Clinic	1 week, June 1946	Va. residents 5 non-Va. residents 10

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
MEDICINE, GENERAL—Continued			
University of Virginia Department of Medicine, University Station, Charlottesville, Va.	Refresher Course in Internal Medicine	2 weeks, June 1946	$ 40
University of Wisconsin Medical School, 418 North Randall Ave., Madison 6, Wis.	Postgraduate Course Various Subjects	12 weeks, arranged	125
	Course for Specialists in Internal Medicine	2 to 6 months, arranged	per month 100
	Observation Course in Medical and Surgical Subjects	1 to 5 months, arranged	per month 100
At: Wisconsin General Hospital, Madison	Observation Course in Medical and Clinical Subjects	1 to 5 months, arranged	per month 100
Marquette University School of Medicine, 561 N. 15th St., Milwaukee	Internal Medicine	3 months, arranged	150
NEUROLOGY AND PSYCHIATRY (See also Medicine and Ophthalmology)			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles At: Los Angeles County Medical Association Building	Medical Psychology	April 4, 1946, 10 periods, once weekly	15
At: White Memorial Hospital	Functional Neurology	March 6, 1946, 10 periods, once weekly	20
University of California, Extension Division, San Francisco At: Langley Porter Clinic	Neuropsychiatry	3 months, Jan., Feb., March 1946	200
	Case Seminar in Psychotherapy	Oct. 1945 thr. June 1946	per semester 150
	Individual Clinical Conferences	2 hours a week	per semester hr. 10
	Individual Conferences and Consultations on Literature and Technique	Oct. 1945 thr. June 1946 2 hours a week	As above
		Oct. 1945 thr. June 1946 2 hours a week	As above
Catholic University of America, Washington, D. C.	Psychopathology	Oct. 1945 thr. June 1946 1 hour per week	Not stated
	Seminar in Clinical Psychology and Psychotherapy	1 year, 2 hours weekly	As above
	Child Psychiatry	4 months, 2 hours a week	As above
	Neurology and Neuropathology	Oct. 1945 thr. June 1946	per semester hr. 10
	Electric Shock Therapy	Oct. 1945 thr. June 1946	per semester hr. 10
	Clinical Psychiatry	Oct. 1945 thr. June 1946 2 hours a week	As above
At: St. Elizabeths Hospital	Introduction to Psychiatry	Oct. 1945 thr. June 1946 2 hours a week	per semester 150 per semester hr. 10
St. Elizabeths Hospital, Washington, D. C.	Psychiatry, Psychosomatic Medicine, Neuroanatomy, Neuropathology	3 to 4 months	Not stated
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course Psychiatry and Neurology	3 weeks, Feb. 25-March 16, 1946	125
Institute for Psychoanalysis, 43 East Ohio St., Chicago	Psychosomatic Case Demonstrations	Winter and Spring, quarters	None
Metropolitan State Hospital, Waltham, Mass.	11th PG Seminar in Neurology and Psychiatry	Jan. 7-April 22, 1946, once weekly	Not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Problems in Neurology	1 quarter, arranged	10
At: Receiving Hospital	Ward Rounds and Conferences	Arranged, 10 weeks, part time	5
Creighton University School of Medicine, 306 N. 14th St., Omaha	A Psychosomatic Case Conference	Arranged	G. I. Bill of Rights and free
American Institute for Psychoanalysis, 240 Central Park South, New York 21	Pioneers of Psychoanalytic Thinking	15 weeks, beginning Feb. 5, 1946	15
	Psychoanalytic Technique Introductory Lectures	5 weeks, beginning Feb. 7, 1946	7.50
	Seminar on Personal Case Histories	15 weeks, beginning Feb. 1, 1946	25
	Continuous Case Seminar	10 weeks, beginning Feb. 5, 1946	12.50
	Child Psychiatry	5 weeks, beginning Feb. 6, 1946	7.50
	Psychoanalytic Technique Advanced Lectures	10 weeks, beginning April 18, 1946	12.50
American Orthopsychiatric Association, 149 East 73d St., New York At: Hotel New Yorker	Annual Scientific Meeting	Feb. 14-16, 1946	300
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Recent Advances in Neurology and Psychiatry	March 4-8, 1946, 5 days	30
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Psychological Aspects of Internal Medicine	Jan. 4-Feb. 15, 1946, 2 months, part time	25
	Psychoanalysis in General Medicine	Jan. 2-March 27, 1946, 13 sessions, part time	50
	Neurological and Psychiatric Diagnosis in General Practice	April 29-May 10, 1946	75
	Neurology and Psychiatry in Pediatrics	March 11-23, 1946, 2 weeks	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Neuropsychiatry	Arranged	Not stated
	Neuro-surgery	Arranged	Not stated
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Continuous Case Seminar	15 sessions, arranged	30
	Introduction to Psychoanalytic Techniques	15 sessions, arranged	10
	Child Psychiatry	12 sessions, Spring, once weekly	25
	Technique of Psychoanalysis	10 lectures, arranged	20
	Seminar on Dream Interpretation	12 sessions, arranged	25
	Introduction to the Rorschach Technique of Personality Diagnosis	10 lectures, once weekly, beginning Feb. 6, 1946	25
	Psychoanalysis and Psychiatry	15 sessions, arranged	30
	Readings in Psychoanalytic Literature	15 sessions, arranged	30
	Seminar in Psychosomatic Medicine	12 sessions, arranged	25
	Introduction to Psychoanalysis	10 lectures, arranged	20
	Neurology	1 month, full time, arranged	200
	Clinical Conference	15 sessions, arranged	30
New York Psychoanalytic Institute, 245 East 82d St., New York 28	Relationship Between Psychoanalysis and Medical Practice	12 sessions, March 22-June 14, 1946	25 plus $2 registration fee
	Clinical Conferences	12 sessions, March 22-June 14, 1946	As above
	General Pathology of the Neuroses	12 sessions, March 22-June 14, 1946	As above

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
NEUROLOGY AND PSYCHIATRY—Continued			
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Neurology	3 months to 1 year	$200 to 600
Duke University School of Medicine, Durham, N. C.	Neuropsychiatry	3 months to 1 year	As above
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined.	Neuropsychiatry Psychiatry and Neurology	3 months or longer, arranged Not determined	None Members 20 Non-Members 40 Physicians in service free
Philadelphia Psychoanalytic Institute, 206 South 13th St., Philadelphia 7	Clinical Conference II (Advanced) Colloquium III Clinical Problems and Technique	Feb. 25-May 20, 1946,7 sessions Feb. 18-April 4, 1946, 5 sessions	9 8
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Technical Procedures of the Neurological Examination Industrial Psychiatry Electro-Shock Therapy	Arranged 3 days, March 7, 8 and 9, 1946 Arranged	Arranged Arranged Arranged
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Course in Neuropsychiatry for Specialists	2 to 6 months, arranged	per month 100
NEUROSURGERY			
Duke University School of Medicine, Durham, N. C.	Neurosurgery	3 months or longer, arranged	None
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Neurosurgery for Specialists	2 to 6 months, arranged	per month 100
NUTRITION **(See also Medicine)**			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Nutrition	Jan. through March 1946, 3 hours per week	10
Creighton University School of Medicine, 306 N. 14th St., Omaha	5 Lectures on Nutrition Fundamentals	Arranged	G. I. Bill of Rights
Duke University School of Medicine, Durham, N. C.	Nutrition	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Nutrition	Arranged	Approximately 25
OBSTETRICS AND GYNECOLOGY **(See also Medicine, Pathology and Surgery)**			
Alabama State Health Department At: Slossfield Health Center, Birmingham, Ala.	Obstetrics	Jan. 14-16, 1946	15
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C. At: Gallinger Municipal Hospital	Intensive Refresher Course in Obstetrics and Gynecology	March 18-April 6, 1946	125
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Obstetrics and Gynecology	Continuously, 2 weeks	10 Ill. Phys. Free
University of Illinois College of Medicine, 1853 West Polk St., Chicago	Refresher Course in Obstetrics	1 week, arranged	None
University of Chicago School of Medicine, 58th and Ellis Ave., Chicago At: Chicago Lying-In Hospital	Refresher Course for Veterans	4 weeks, April 1, 1946; tentative date	Not determined
Chicago Maternity Center, 1336 South Newberry Ave., Chicago	Assistant Residency in Obstetrics	4 to 6 months, continuously	None
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Obstetrics Operative and Office Gynecology	2 weeks, Feb. 11, March 11, April 8, May 6, June 3, 1946 2 weeks, Feb. 25, March 25, April 22, May 20, June 17, 1946	150 150
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 13	Obstetrics and Gynecology	5 days, Jan. 14-18, 1946	25
Louisiana State University School of Medicine, 1542 Tulane Ave., New Orleans 13	Refresher Course in Obstetrics	2 weeks, full time, quarterly	None
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Boston Lying-in Hospital	Clinical Obstetrics	Arranged, 1 month or longer	125
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Gynecologic Pathology	April through June 1946, 4 hours per week	25
University of Nebraska College of Medicine, 42d St. and Dewey Ave., Omaha	Intramural Ob.-Ped. Training, Postgraduate	1-2 weeks, arranged	None
Creighton University School of Medicine, 306 N. 14th St., Omaha	Obstetrics and Gynecology	Arranged	G. I. Bill of Rights and free
Duke University School of Medicine, Durham, N. C.	Obstetrics and Gynecology	3 months or longer, arranged, full time	None
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical and Operative Gynecology (Cadaver)	6 weeks, arranged	175
New York University College of Medicine, 477 First Ave., New York 16 At: Beth Israel Hospital	Gynecology	Spring 1946, 16 weeks, part time	250
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Manikin	April 16, 1946, 12 sessions, part time	20
At: Long Island College Hospital	Prenatal Care	April 18, 1946, 8 sessions, part time	20
At: Cumberland Hospital	Complications of Pregnancy	April 2, 1946, 8 sessions, part time	20
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Gynecological Endocrinology	Jan. 3, March 5, May 7, 1946, 24 sessions, part time	100
	Symposium on Recent Advances in Gynecology	June 1946, to be announced, 6 days	50
	Seminar in Gynecology	Jan. 2, 1946, 3 months	2 months 225 3 months 300
	Seminar in Gynecology	April 1, 1946, 2 months	225
	Cystoscopy and Endoscopy	Arranged, 15 weeks, part time	75
	Surgical Anatomy as Applied to Operative Gynecology (Cadaver)	Arranged, 12 sessions	200
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Margaret Hague Maternity Hospital	Practical Course in Obstetrics	1st of any month, 3 months	350
	Observation Course in Obstetrics	1st of any month, 1 month	100
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Obstetrics and Gynecology	9 months minimum	Not stated
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Obstetrics	5 days, full time, Jan. 14-18, 1946	50

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY—Continued			
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottsford Road, Philadelphia 29	Practical Obstetrics	Arranged	Arranged
Tennessee State Medical Association At: Various centers	Gynecology	10 weeks each, Jan. 1946-Jan. 1947	Whites 10 Negroes 3.50 Interns 2.50
School of Medicine, University of Tennessee, 874 Union Ave., Memphis, Tenn.	Graduate Medical Course in Caudal Analgesia	Beginning Dec. 30, 1945	100
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Obstetrics and Gynecology	2 months, arranged	75
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas.	Obstetrics	1 week, full time, March 11-16, 1946	25
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Obstetrics and Gynecology for Specialists	2 to 6 months, arranged	per month 100
OPHTHALMOLOGY **(See also Medicine and Otorhinolaryngology)**			
George Washington University School of Medicine, 1335 H St., N.W., Washington 5, D. C.	Course for Orthoptic Technicians	6 months, Jan. 7-July 1, 1946; April 2-Sept. 15, 1946	Not stated
	9th Annual PG Course in Ocular Surgery, Pathology and Orthoptics	1 week, Feb. 4-9, 1946	Not stated
The Children's Memorial Hospital, 707 Fullerton Ave., Chicago	Postgraduate Conference in Neuromuscular Anomalies of the Eyes	May 12-17	50
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Clinical Ophthalmology	2 weeks every 2 weeks	50
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Boston City Hospital	Ophthalmology	Monthly, part time	50
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Massachusetts Eye and Ear Infirmary	Fundamental Sciences in Ophthalmology	March 4-April 27, 1946	200
	Special Course in Clinical Ophthalmology	April 29-May 25, 1946	100
	Fundamentals of Refraction	May 27-June 22, 1946	60
University of Michigan, 1313 Ann St., Ann Arbor, Mich. At: University of Michigan Hospital	Ophthalmology and Otolaryngology	Spring 1946, 1 week	25
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Basic Ophthalmology	Arranged, 10 weeks, part time	15
Creighton University School of Medicine, 306 N. 14th St., Omaha	Ophthalmology	Arranged	G. I. Bill of Rights and free
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Montefiore Hospital	Ophthalmoscopy	Jan. 15-March 15, 1946, 2 months, part time	35
At: Mount Sinai Hospital	Advanced Ophthalmoscopy	Arranged	25
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Motor Anomalies of the Eye	March 4-9, 1946, 6 days, full time	75
	Anomalies of the Ocular Muscles	March 11-15, 1946, 5 days	60
	Differential Diagnosis with the Slit Lamp	Feb. 25-March 1, 1946, 5 days part time	45
	Surgery of the Eye	March 18-23, 1946, 6 days, full time	75
	Ophthalmic Neurology	Feb. 25-March 1, 1946, 5 days, part time	45
Columbia University— At: New York Eye and Ear Infirmary, 218 Second Ave., New York 3	Glaucoma Clinic	Arranged, 10 hours	40
	Anatomy and Physiology	Arranged, 1 month	40
	Anatomy of the Temporal Bone	Arranged, 1 month	45
	External Eye Disease—Ocular Therapy	Arranged, 1 month, part time	40
	Embryology	Arranged, 1 month	40
	Bacteriology, Serology and Immunology	Arranged, 1 month	40
	X-Ray	Arranged, 6 hours	25
	Slit Lamp Microscopy	Arranged, 1 month, part time	50
	Refraction	Arranged, 3 months, part time	100
	Plastic Eye Surgery	Arranged, 6 weeks, part time	75
	Physiologic Optics	Arranged, 2 months, part time	75
	Ophthalmoscopy	Arranged, 1 month, part time	40
	Operative Eye Surgery	Arranged, 1 month, part time	75
	Ocular Muscles	Arranged, 1 month, part time	40
	Perimetry	Arranged, 1 month, part time	40
	Neuro-Ophthalmology	Arranged, 1 month, part time	30
	Histopathology of the Eye	Arranged, 3 months, part time	85
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Otolaryngology (Clinical)	6 weeks, Jan. 2, 1946; April 1, 1946	75 Half fee to physicians in service
	Ophthalmology	6 weeks, part time, Jan. 2, April 1, 1946	50 Half fee to physicians in service
	Ophthalmology (Also Cadaver and Refraction)	3 months, part time, Jan. 2, April 1, 1946	275 Half fee to physicians in service
	Otolaryngology and Ophthalmology (Clinical)	6 weeks, full time, Jan. 2, April 1, 1946	100 Half fee to physicians in service
	Otolaryngology and Ophthalmology (Also Cadaver)	3 months, full time, Jan. 2, April 1, 1946	600 Half fee to physicians in service
	Refraction	6 weeks, part time, Jan. 2, April 1, 1946	100 Half fee to physicians in service
Duke University School of Medicine, Durham, N. C.	Ophthalmology	3 months or longer, arranged, full time	None

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
ORTHOPEDIC SURGERY (See also Anatomy)			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles	General Orthopedic Surgery and Traumatology	Feb. 4, 1946, 12 weeks	$ 20
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Seminar in Orthopedic Surgery	Jan. 28-Feb. 28, 1946,10 days, full time	90
	Orthopedics in General Practice	April 29-May 4, 1946	50
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Advanced Orthopedics of the Foot	8 periods, arranged	Not stated
	Operative Orthopedics (Cadaver)	5 periods, arranged	Not stated
	Orthopedic Surgery	3 months, arranged	Not stated
Duke University School of Medicine, Durham, N. C.	Orthopedic Surgery	3 months or longer, arranged full time	None
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Orthopedics	5 days, full time, April 8-12, 1946	50
OTOLOGY			
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3 At: New York Eye and Ear Infirmary, 218 2d Ave., New York	Surgical Anatomy as Applied to Otology	Arranged, part time	per hour 10
	Otology	Arranged, 1 month, part time	40
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Advanced Otology	Arranged	Not stated
	Motor Anomalies (Binocular Imbalance)	6 weeks, arranged	Not stated
	Ocular Muscles	Arranged	Not stated
	Plastic Reparative Surgery	4 weeks, Spring, arranged	Not stated
OTORHINOLARYNGOLOGY (See also Anatomy)			
College of Medical Evangelists, 312 N. Boyle Ave., Los Angeles At: White Memorial Hospital	Otolaryngology	Jan. 8, 1946, 12 periods, part time	24
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Clinical Otolaryngology	2 weeks, every 2 weeks	50
Illinois Masonic Hospital, 834 Wellington Ave., Chicago	Introduction to Rhinoplasty	Jan. 8-15, 1946, 1 week	150
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Boston Dispensary	Otolaryngology	Monthly, part time	30 and 50
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Broncho-Esophagology and Laryngeal Surgery	Spring 1946, 2 weeks	100
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	Refresher Course of Otolaryngology for Specialists	Spring 1946, 1 week	50
	Refresher Course in Otolaryngology	Jan. 1946, tentative	Ill. Phys. 75 nonresidents 100
University of Michigan, 131 Ann St., Ann Arbor, Mich. At: University of Michigan Hospitals	Ophthalmology and Otolaryngology	Spring 1946, 1 week	25
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in Otolaryngology	Jan. 14-18, 1946, 5 days	25
Creighton University School of Medicine, 306 N. 14th St., Omaha	Otolaryngology	Arranged	G. I. Bill of Rights and free
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Head and Neck Dissection	6 weeks, arranged	150
New York University College of Medicine, 477 First Ave., New York 16 At: St. Vincent's Hospital	Refresher Course on the Larynx for Specialists	Arranged, 4 months, part time	Arranged
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Otolaryngologic Procedures	1 month, arranged	100
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Columbia-Presbyterian Medical Center	Bronchoscopy	Arranged, 3 weeks	250
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Surgical Anatomy as Applied to Rhinology and Laryngology	Arranged, part time	per hour 10
	Diagnostic Procedures in Otolaryngology	Arranged, part time, Jan. 2-June 30, 1946	40 to 60
	Dissection of the Head and Neck	Arranged	per hour 10
At: New York Eye and Ear Infirmary, 218 2d Ave., New York	Broncho-Esophagology	Arranged, 12 days, intensive or 6 weeks	250
	Operative Ear Surgery	Arranged, 1 month	100
Duke University School of Medicine, Durham, N. C.	Otolaryngology	3 months or longer, arranged, full time	None
Gill Memorial Eye, Ear and Throat Hospital, 711 South Jefferson St., Roanoke, Va.	Annual Spring Graduate Course at the Hospital	1 week, 1st week in April, 1946	50
PATHOLOGY (See also Medicine, Obstetrics and Gynecology, Ophthalmology and Otorhinolaryngology)			
Indiana University School of Medicine, 1040 West Michigan St., Indianapolis 7	Course in Basic Sciences of Anatomy, Physiology and Pathology	6 months, tentative	not stated
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Pathology of the Heart	Arranged, 1 quarter	20
	Pathology of Neoplasms	Arranged, part time	20
	Pathology of Tuberculosis	Arranged, part time	20
	Clinical Pathology	Jan. through March 1946, part time	10
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in Pathology of Skin Diseases	Jan. 21-Feb. 20, 1946	50
Creighton University School of Medicine, 306 N. 14th St., Omaha	Surgical Pathology	1 or 2 weeks, arranged	G. I. Bill of Rights and free
At: St. Joseph's Hospital	Microscopical Pathology	2 weeks, arranged	As above
	Senior Pathological Conference	Arranged	As above
	Senior Clinicopathologic Conference	Arranged	As above
	Clinical Pathological Conference	Arranged	As above
	Urological Pathology	Arranged	Not stated
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Surgical Pathology	Beginning in 1946, 15 weeks	100

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PATHOLOGY—Continued			
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Pathology of the Blood and Blood-forming Organs	March 1-27, 1946	$ 75
	Pathological Physiology, Functional and Chemical Aspects	Jan. 2-Feb. 27, 1946	30
	Gross and Microscopic Pathology	April 22-May 31, 1946	75
	Surgical Pathology	March 5-June 13, 1946	150
	Gynecological Pathology	Jan. 8-Feb. 4, 1946	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pathology and Bacteriology	Arranged	Not stated
	Surgical Pathology	Arranged	Not stated
	Practical Laboratory Instruction in Pathology and Bacteriology	Arranged	Arranged
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Pathology and Bacteriology	1 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Pathological Research	3 months or longer, full time, arranged	None
	Staff Appointments in Pathology	3 months or longer, full time, arranged	None
	Systematic Review of General and Surgical Pathology	3 months or longer, full time, arranged	None
	Gross and Microscopic Conferences on Surgical Pathology	3 months or longer, full time, arranged	None
	Pathology	3 months or longer, full time, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Pathology	Arranged	Approximately 25
American College of Physicians, 4200 Pine St., Philadelphia 4 At: Location not determined	Pathological Physiology of Diseases	Not determined	Members 20 Non-Members 40 Physicians in service free
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Surgical Pathology	Arranged	Arranged
PEDIATRICS (See also Allergy, Cardiovascular Diseases, Endocrinology, Neurology and Psychiatry, Obstetrics and Gynecology)			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course in Pediatrics	4 weeks, March 4-30, 1946	150 G. I. Bill of Rights
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Formal Course in Pediatrics	2 weeks, given from April 8-June 3, 1946	75
	Clinical Course in Pediatrics	2 weeks or 1 month, every 2 weeks	2 weeks 60 1 month 100
University of Illinois College of Medicine, 1853 West Polk St., Chicago	Refresher Course in Pediatrics	1 week, arranged	None
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11	Pediatrics	Jan. 7-Feb. 1, 1946	registration 5 tuition 75
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann St., Ann Arbor, Mich. At: University of Michigan Hospital	Recent Advances in Care and Treatment of Children	Spring 1946, 3 days	15
University of Nebraska College of Medicine, 42d St. and Dewey Ave., Omaha	Clinical Review in Pediatrics	1 week, arranged	None
Creighton University School of Medicine, 306 N. 14th St., Omaha At: Dispensary, affiliated hospitals, Salvation Army Home, St. James Orphanage	Pediatrics	Arranged	G. I. Bill of Rights and free
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Symposium on Recent Advances in Pediatrics	March 25-30, June 17-22, 1946	50
	Clinical Pediatrics	Jan. 7-Feb. 2, April 1-27, 1946	125
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Beth El Hospital	Clinical Pediatrics	Arranged, 10 sessions	20
	General Pediatrics, Including Diseases of the Newborn	Arranged, 3 months	Veterans 75 Civilians 100
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Pediatrics	4 weeks, part time, arranged	50 Half fee to physicians in service
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Clinical Pediatrics	1 month, arranged	150
Duke University School of Medicine, Durham, N. C.	Pediatrics	3 months or longer, arranged, full time	None
Southern Pediatric Seminar, Saluda, N. C.	Southern Pediatric Seminar	2 weeks, July 1946	25
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Pediatrics	5 days, full time, Feb.4-8, 1946	50
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Pediatrics	2 months, arranged	75
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Spring Conference in Pediatrics	1 week, full time, April 1946	25
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Course in Pediatrics for Specialists	2 to 6 months, arranged	per month 100
PHARMACOLOGY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Survey of Pharmacology	Arranged, 10 weeks	Each course 10
	Principles of Therapeutics		
	Seminar in Pharmacology	Arranged, part time	5
Creighton University School of Medicine, 306 N. 14th St., Omaha	Pharmacology	6 weeks, tentative, arranged	G. I. Bill of Rights and free
Duke University School of Medicine, Durham, N. C.	Recent Advances in Pharmacology	10 to 12 weekly seminars, arranged	None
	Pharmacology	3 months or longer, arranged	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Pharmacology	Arranged	Approximately 25
PHYSICAL MEDICINE			
New York University College of Medicine, 477 First Ave., New York 16 At: Bellevue Hospital	Physical Medicine	Spring 1946, 3 months	200
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Physical Medicine	3 days, March 4, 5 and 6, 1946	12.50
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Physical Medicine for Specialists	2 to 6 months, arranged	per month 100

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
PHYSIOLOGICAL CHEMISTRY			
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	Review of Physiological Chemistry	Arranged, 10 weeks	$ 10
	Seminar in Physiological Chemistry	Arranged, part time	5
PHYSIOLOGY			
Indiana University School of Medicine, 1040 West Michigan St., Indianapolis 7	Course in Basic Sciences of Anatomy, Physiology and Pathology	6 months, tentative	Not stated
Columbia University Faculty of Medicine, 630 West 168th St., New York 32 At: Mount Sinai Hospital	Normal and Pathological Physiology of Water and Electrolyte Balance	Feb. 6-April 12, 1946	30
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Normal and Pathological Physiology	March 4-15, 1946	75
Duke University School of Medicine, Durham, N. C.	Recent Advances in Physiology	10 to 12 weekly seminars, arranged, part time	None
	Physiology	3 months or longer, arranged full time	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Physiology	Arranged	Approximately 25
POLIOMYELITIS			
Georgia Warm Springs Foundation, Warm Springs, Ga.	Treatment of Acute and Convalescent Poliomyelitis	1st Monday of each month, 5 days	None
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Course in the Kenny Technique in Management of Infantile Paralysis	Arranged	25
PROCTOLOGY **(See also Gastroenterology)**			
College of Medical Evangelists, 312 N. Boyle St., Los Angeles At: White Memorial Hospital	Proctology	Jan. 17, 1946, 10 periods	20
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: Pratt Diagnostic Hospital and Boston Dispensary	Proctology I	Jan. 28-Feb. 2, 1946 Apr. 22-27, 1946	registration 5 tuition 25
	Proctology II	Jan. 28-Mar. 2 Apr. 29-May 25, 1946	registration 5 tuition 100
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1 At: Receiving, Harper and St. Marys Hospitals	Ward Rounds and Conferences	Arranged, part time	10
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Jewish Hospital	Proctology	April 15, 1946, 4 weeks	25
New York Medical College-Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Proctology	2 months, arranged	75
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Clinical Proctology	6 weeks, part time, Jan. 2, April 1, 1946	75 Half fee to physicians in service
	Proctology (Cadaver) and Clinical Proctology and Gastroenterology	6 weeks, part time, Jan. 2, April 1, 1946	200 Half fee to physicians in service
New York University College of Medicine, 477 First Ave., New York 16	Proctology	Arranged, 10 weeks	Veterans 125 Civilians 175
PUBLIC HEALTH **(See also Medicine)**			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course in Public Health	2 weeks, March 11-23, 1946	75 also G. I. Bill of Rights
Harvard University School of Public Health, 55 Shattuck St., Boston	Industrial Hygiene	3 months, Jan. 28-April 27, 1946	45
	Public Health Practice Venereal Disease Control	6 weeks, April 9-May 24, 1946	35
Albany Medical College, Albany, N. Y. Correspondence course	Extension Course for Grade II Health Officers	1 year, continuously	40
Duke University School of Medicine, Durham, N. C.	Public Health	3 months or longer, arranged, full time	None
University of North Carolina School of Medicine, Chapel Hill, N. C.	Public Health	Arranged, 1 to 3 quarters	100
RADIOLOGY **(See also Cardiovascular Diseases, Chest Diseases, Electrocardiography and Otorhinolaryngology)**			
College of Medical Evangelists, 312 N. Boyle St., Los Angeles	Roentgenology	March 7, 1946, 10 hours	20
American College of Radiology, 20 N. Wacker Drive, Chicago At: Philadelphia	Postgraduate Course in Radiology	Feb. 4-9, 1946, 1 week	50
At: Various medical schools and hospitals	Special Residencies	3 and 6 months, arranged	Arranged
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	X-Ray Interpretation	Weekly	Not stated
	Fluoroscopy	Weekly	Not stated
	Deep X-Ray Therapy	Weekly	Not stated
	X-Ray Therapy	2 weeks, every 2 weeks	110
	Lecture and Clinical Roentgenology	2 weeks, every 2 weeks	125
	Clinical Roentgenology	2 weeks, every 2 weeks	70
Harvard Medical School, Courses for Graduates, 25 Shattuck St., Boston 15 At: Massachusetts General Hospital	General Radiology	Jan. 1946, monthly, 1 month	100
At: Peter Bent Brigham Hospital	General Roentgenology	Monthly, 1 month	100
Tufts Medical School Postgraduate Division, 30 Bennet St., Boston 11 At: J. H. Pratt Diagnostic Hospital	Radiology	Apr. 8-11, 1946	registration 5 tuition 25
University of Michigan Medical School, Department of Postgraduate Medicine, 1313 East Ann St., Ann Arbor, Mich.	Diagnostic Roentgenology	Spring 1946, 5 days	25
Wayne University College of Medicine, 1516 St. Antoine St., Detroit 1	X-Ray Conference	Spring 1946, 3 months, part time	Not stated
	Clinical Roentgenology	2 weeks, every 2 weeks	70
Creighton University School of Medicine, 306 N. 14th St., Omaha	Radiology	Arranged	G. I. Bill of Rights and free

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
RADIOLOGY—Continued			
Columbia University Faculty of Medicine, 630 West 168th St., New York 32			
At: Columbia-Presbyterian Medical Center	Radiological Physics	Jan. 9, 1964, 16 sessions	$ 50
At: Montefiore Hospital	Advanced Cardiovascular Roentgenology	Jan. 3- March 14, March 21-June 6, 1946	40
	Elementary Roentgenology of the Gastrointestinal Tract	Feb. 5-March 26, 1946, part time	40
	Advanced Roentgenology of the Gastrointestinal Tract	April 2-May 28, 1946, part time	40
	Supplementary Cardiovascular Roentgenology	Jan. 3-March 14, 1946, part time	35
	Elemental Cardiovascular Roentgenology	March 21-June 6, June 6-Aug. 15, 1946, part time	50
At: Mount Sinai Hospital	Recent Advances in Radiology	Feb. 25-March 1, 1946, 5 da.	40
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2	Cardiovascular Roentgenology	April 11, 1946, 8 sessions	20
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Radiology	2 months, arranged	150
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Advanced Course in Radiotherapy	4 weeks	Not stated
	Superficial and Deep X-Ray Therapy	4 weeks, 1st of each month	Not stated
	Practical Roentgenological Interpretation and Technique	3 months	Not stated
	Diagnostic Roentgenology and Radiotherapy (Advanced)	6 weeks or 3 months, full time	150 and 300 Half fee to physicians in service
New York University College of Medicine, 477 First Ave., New York 16			
At: Lincoln Hospital	Radiology	Spring 1946	100
At: Bellevue Hospital	Refresher Course in Radiation Therapy	Spring 1946, 8 weeks	Arranged
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Radiology	9 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Radiology	3 months or longer	None
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Radiology	5 days, full time, March 18-22, 1946	50
Wisconsin Anti-Tuberculosis Association, 324 East Wisconsin Ave., Milwaukee	Interpretation of Chest X-Ray Films	6 weeks, 2 hours per week	None
SURGERY			
(See also Anatomy, Chest Diseases, Gastroenterology, Medicine, Ophthalmology, Otology, Otorhinolaryngology, Pathology and Proctology)			
University of Southern California School of Medicine, 3551 University Ave., Los Angeles	Review of General Surgery	3 months, every 3 months, beginning Dec. 17, 1945	Tuition 180 Registration 5
At: Los Angeles County Hospital			
Research Study Club of Los Angeles, Inc., 727 West 7th St., Los Angeles	Applied Anatomy and Cadaver Surgery of Head and Neck	Feb. 1-5, 1946	50 Phys. in service 25
Emory University School of Medicine, 50 Armstrong St., Atlanta, Ga.	General Surgery	April 8-June 29, 1946, 12 weeks	250
University of Georgia School of Medicine, University Place, Augusta, Ga.	General Medicine and Surgery	1 week, June 1946	None
At: University Hospital			
George Washington University School of Medicine, 1335 H St. N.W., Washington 5, D. C.	Intensive Refresher Course in General Surgery	March 25-April 13, 1946, 3 weeks	125
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Gall Bladder Surgery	1 week, April 15-June 11, 1946	100
	Surgery of the Colon and Rectum	1 week, March 18, April 29, June 10, 1946	100
	Surgical Technique	2 weeks, every 2 weeks, Jan. 14, 1946	200
	Vaginal Approach to Pelvic Surgery	1 week, Feb. 18, March 18, April 15, May 13, June 10, 1946	100
	Thoracic Surgery	2 weeks, every 2 weeks	125
	1 Month General Surgery	4 weeks, Jan. 28, Feb. 11, March 11, April 8, May 6, June 3, 1946	300
University of Minnesota Center for Continuation Study, Minneapolis 14	Continuation Courses in Surgery	April 8-June 29, 1946, 3 months	150
Creighton University School of Medicine, 306 N. 14th St., Omaha	Medical and Surgical Pathological Conferences	Arranged	G. I. Bill of Rights and free
	Ward Walks	Arranged	As above
	12 General Lectures on Modern Surgical Procedures	Arranged	As above
	General Surgical Clinics	Arranged	As above
	General Surgery in the Dispensary	Arranged	As above
Columbia University Faculty of Medicine, 630 West 168th St., New York 32	Symposium on General Surgery	May 13-17, 1946	75
At: Columbia Presbyterian Medical Center	Surgery of the Gastrointestinal Tract	April 15-May 10, 1946	150
At: Mount Sinai Hospital	Symposium on General Surgery	May 13-17, 1946	75
	Blood Transfusion, Blood and Plasma Bank	Arranged, 12 hours	35
	Surgery of the Gastrointestinal Tract	Jan. 2-May 27, 1946, part time	200
	Surgical Anatomy as Applied to Colon and Rectal Surgery	Arranged, 12 hours, part time	100
	Seminar in Traumatic Surgery	March 4-16, 1946	90
	Surgical Anatomy as Applied to Thoracic Surgery	Arranged, 12 sessions	200
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Dissection and Surgical Anatomy	Arranged, 24 hours	150
	Diagnosis and Treatment of Trauma	Arranged, full time	50
	Review of General Surgery for Surgeons	April 1-30, 1946	125
	Diseases of the Liver, Biliary Tract and Pancreas, Preliminary Course	Jan. 14-18, 1946	45
	Diseases of the Liver, Biliary Tract and Pancreas, Intermediate Course	Feb 25-March 1, 1946	45
	Diseases of the Liver, Biliary Tract and Pancreas, Advanced Course for Surgeons	May 20-24, 1946	60

Postgraduate Continuation Courses for Practicing Physicians—Jan. 1, 1946 to July 15, 1946—Continued

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
SURGERY—Continued			
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Peripheral Vascular Disease	14 sessions, arranged	$200
	Thoracic Surgery	36 hours, arranged	250
	Surgical Technique	75 hours, arranged	375
	Gastrointestinal Surgery	14 sessions, arranged	200
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Surgical Operative Clinic and Lecture Course	6 weeks, full time, Jan. 2, April 1, 1946	100 Half fee to physicians in service
	Combined Surgical Course	3 months, full time, Jan. 2, April 1, 1946	350 Half fee to physicians in service
	Clinical and Operative (Cadaver) Surgery	6 weeks, full time, arranged	200
New York University College of Medicine, 477 First Ave., New York 16 At: Lenox Hill Hospital and Tribor Hospital	Recent Advances in Thoracic Surgery	March 1946, 1 month	150
Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, N. C.	Specialty Training in Surgery	9 months minimum	Not stated
Duke University School of Medicine, Durham, N. C.	Surgery	3 months or longer, arranged, full time	None
Oklahoma State Medical Association, 210 Plaza Court Building, Oklahoma City At: Various areas throughout Oklahoma	Surgical Diagnosis	1 year, continuous	9
University of Oklahoma School of Medicine, 801 N.E. 13th, Oklahoma City	Surgery	4 weeks, Jan. 7-Feb. 2, 1946	50
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in General Surgery	5 days, full time, June 10-14, 1946	50
Southwestern Medical College, 2211 Oak Lawn, Dallas, Texas	Surgery	2 months, arranged	75
University of Texas School of Medicine, 912 Avenue B, Galveston, Texas	Surgery	1 week, Spring, 1946	25
University of Vermont College of Medicine, Pearl St., College Park, Burlington, Vt.	Surgery	Beginning of any month	per year 500 or prorated
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Surgery Course for Specialists	2 to 6 months, arranged	per month 100
At: Wisconsin General Hospital	12 week Postgraduate Course	12 weeks, arranged	125
	Observation Course in Medical and Surgical Subjects	Arranged, 1 to 5 months	per month 100
THERAPY			
New York Medical College Flower and Fifth Avenue Hospitals, 1 East 105th St., New York	Therapeutics	1 month, arranged	100
New York University College of Medicine, 477 First Ave., New York 16	Cutaneous Therapeutics	Arranged, 1 week	Veterans 15 Civilians 25
University of Oregon Medical School, Marquam Hill, Portland 1	Intensive Course in Applied Therapeutics	5 days, full time, April 29-May 3, 1946	50
TROPICAL MEDICINE			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans 13	Tropical Medicine	Jan. 2 thr. May 25, 1946	300
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Tropical Medicine and Parasitology	June 3-7, 1946	45
Columbia University School of Public Health	Tropical Medicine	April 1-May 25, 1946	100
Marquette University School of Medicine, 561 North 15th St., Milwaukee	In the Field of Tropical Diseases	4 weeks, once a week	Nominal
UROLOGY **(See also Anatomy)**			
College of Medical Evangelists, 312 N. Boyle St., Los Angeles At: White Memorial Hospital	General Urology	Feb. 5, 1946, 6 periods	12
Cook County Graduate School of Medicine, 427 South Honore Street, Chicago 12	Urology and Cystoscopy	4 weeks, every 4 weeks	375
Creighton University School of Medicine, 306 N. 14th St., Omaha	Urology	6 weeks, tentative, arranged	G. I. Bill of Rights and free
Columbia University—At: New York Post-Graduate Medical School, 303 East 20th St., New York 3	Advanced Course in Urology	March 1-April 30, 1946	250
James Buchanan Brady Foundation of the New York Hospital, 525 East 68th St., New York	Urology	6 months, part time, arranged	500
Long Island College of Medicine, Medical Society of County of Kings and Academy of Medicine, 1313 Bedford Ave., Brooklyn 2 At: Long Island College Hospital	Urology	1 month or longer 1st of each month	per month 25
New York Polyclinic Medical School and Hospital, 345 W. 50th St., New York 19	Urology	8 months, full time	Not stated
New York University College of Medicine, 477 First Ave., New York 16	Clinical Urology	Spring 1946, 6 weeks	100
Duke University School of Medicine, Durham, N. C.	Urology	3 months or longer, arranged full time	None
Woman's Medical College of Pennsylvania, Henry Avenue and Abbottsford Road, Philadelphia 29	Female Urology	16 weeks, 3 hours per week	100
University of Wisconsin Medical School, 418 North Randall St., Madison 6, Wis.	Course in Urology for Specialists	2 to 6 months	per month 100
VENEREAL DISEASE **(See also Dermatology and Syphilology)**			
Bureau of Social Hygiene, Department of Health, 125 Worth St., New York At: Central Clinic	Practical Course in Diagnosis Treatment and Control of Venereal Disease	Every 2 weeks	None
	Seminar in Diagnosis and Treatment of Venereal Diseases	Spring 1946, 14 sessions	None
Institute for Control of Syphilis, 3400 Spruce St., Philadelphia	Course in Applied Venereal Diseases Epidemiology	3 months, arranged	Arranged
	6 Months Essential Basic Training Course	6 months, arranged	125
	4 Weeks Intensive Review Course	4 weeks, arranged	50
	3 weeks Venereal Disease Course	3 weeks, arranged	35
	Intensive Training Course in Venereal Disease Control	10 days, arranged	25

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Failure to Order Roentgenogram in Treatment of Fractured Terminal Phalanx of a Finger. —The patient crushed her right ring finger in a folding bed Aug. 30, 1941. The third day thereafter she consulted the physician defendant, who intimated that the finger was broken. The finger was so swollen, however, that he could not apply splints until two days later, when it was still so swollen and "so crooked that he could not manipulate the finger even yet, but he did put splints on it and left it crooked the way it was at that time." On several occasions thereafter the patient asked the physician about an "x-ray picture," but the physician replied that it would not be necessary to have one taken. Apparently the patient saw the physician every ten days or two weeks during October and November. The finger remained swollen and crooked. About October 25 the patient on her own volition had a roentgenogram taken by another physician but the defendant, although he knew that the roentgenogram had been taken, did not ask to examine it. Just what that roentgenogram showed is not made clear. About November 25, after the patient, according to her testimony, had "told" the physician "what the x-ray showed," he advised her "to remove the splint for a while and see if it would heal any better without it." The patient then inquired about an operation on the finger "to remove the bone shown" in the roentgenogram, but the physician stated that "it wouldn't do any good to rush an operation." In January the patient again inquired concerning an operation and the physician then advised her to have another roentgenogram taken, apparently admitting at that time that he should have had one taken when he first undertook treatment and that any "fault" in the matter of procuring one was all his own. The roentgenogram taken at that time revealed a "fracture of the base of the terminal phalanx, whose shaft . . . [was] markedly displaced." After examining the roentgenogram the physician concluded that because of the lapse of time it would then do no good to operate and referred the patient to an orthopedic specialist, who examined and taped the finger. A few days later the patient removed the tape because of discomfort and when she told the physician defendant this fact apparently the defendant withdrew from the case. A bad result eventuated and the patient subsequently sued the defendant, alleging that the bad result was due to his negligent diagnosis and treatment, attributed to his failure to have a roentgenogram made earlier in the course of his treatment. The trial court entered a judgment of nonsuit, and the patient appealed to the Supreme Court of California.

In considering, said the Supreme Court, whether the judgment of nonsuit in this case was proper, we must resolve every conflict in the evidence adduced in favor of the patient and we must consider every inference which can reasonably be drawn and every presumption which can fairly be deemed to arise in support of the plaintiff, and accept as true all evidence, either direct or indirect, which tends to sustain the plaintiff's case. The only direct expert testimony adduced at the trial was that of the physician defendant. So far as is here material, he testified that in the case of a fracture of the phalanx a splint should be applied "in the position in which healing is most apt to occur" and that was exactly what he did in treating the patient. When he applied the splint, he stated,

> "to the extent of clinically treating a fracture of that phalanx I knew that there was a chip off the posterior surface of the phalanx. . . . Any x-ray that might have been taken on September 2 would merely have been a confirmation of my clinical judgment regarding that fracture . . . At the time this finger was splinted it was still slightly swollen and inflamed from the crushing force of her injury. The finger was brought up in as full extension as possible, and that is all that anybody can do to reduce that type of fracture. There is no such thing as setting the fracture. What you have to do is to set the main bone as closely as possible to the place that is fractured off," and that was done in this case.

The defendant apparently contended that there was a latent arthritic condition present in the patient while he undertook treatment. Such a condition, he stated, tends to retard healing and calls for additional care on the part of the physician. While he made no laboratory tests for arthritis he depended on his senses, his sight and his sense of touch. While he believed that the patient had a latent tendency toward the development of arthritis there was no acute arthritis present. However, he believed, even if acute arthritis had been present, no material difference could have been made in the treatment, which, in any event, would still be to splint the finger and keep it immobilized in a condition in which healing would be most likely to take place, which is full extension. The physician knew, he testified, that the finger had to be splinted in full extension and while taking a roentgenogram would perhaps have added some slight confirmation to what he did it would not have changed what he did in the slightest, nor would it have changed the eventual result. About four weeks after he first treated the injury, he further testified, at a time just before the plaintiff of her own volition had had the first roentgenogram taken, he realized that the injury was a little slow in healing but he fully expected the fracture to heal and for the patient to have a good result. Even by that time, he stated, it was extremely doubtful to him whether or not the arthritis would have shown definitely in any roentgenogram that might have been taken. Defendant further testified that of eight physicians in general practice in the community in which he practiced, seven had told him that it was their custom to treat such fractures without invariably demanding a roentgenogram.

As indicating the general rule of law that governs in malpractice actions, the Supreme Court quoted from *Engelking* v. *Carlson* (1939), 13 Cal. (2d) 216, 88 P. (2d) 695:

> The law has never held a physician or surgeon liable for every untoward result which may occur in medical practice. It requires only that he shall have the degree of learning and skill ordinarily possessed by physicians of good standing practicing in the same locality and that he shall use ordinary care and diligence in applying that learning and skill to the treatment of his patient. [Citation.] Whether he has done so in a particular case is a question for experts and can be established only by their testimony. [Citations.] . . . Negligence on the part of a physician or surgeon will not be presumed; it must be affirmatively proved. . . . It is true that in a restricted class of cases the courts have applied the doctrine of res ipsa loquitur in malpractice cases. But it has only been invoked where a layman is able to say as a matter of common knowledge and observation that the consequences of professional treatment were not such as ordinarily would have followed if due care had been exercised.

The court further quoted from *Bickford* v. *Lawson* (1938), 27 Cal. App. (2d) 416, 81 P. (2d) 216, as follows:

> The necessity of employing an x-ray apparatus in reducing a fractured limb depends entirely upon the circumstances of the particular case. The question as to whether the reduction and treatment of a fractured limb without the use of an x-ray machine constitutes negligence depends upon what an ordinarily skilled physician practicing in that vicinity, in the exercise of due care and professional judgment, would be required to do under like circumstances. The determination of those questions depends upon expert testimony.

The expert testimony, continued the court, to establish a plaintiff's prima facie case in a malpractice action may be that of a defendant. *Lawless* v. *Calaway* (1944), 24 Cal. (2d) 81, 147 P. (2d) 604; *Anderson* v. *Stump* (1941), 42 Cal. App. (2d) 761, 109 P. (2d) 1027. We can presume that the defendant in testifying will state his case as favorably to himself as possible. Furthermore, extrajudicial admissions of a physician defendant have the same legal competency as direct expert testimony to establish the critical averments of the complaint. While it is true that an extrajudicial statement amounting to no more than an admission of bona fide mistake of judgment or untoward result of treatment is not alone sufficient to permit the inference of breach of duty, such an extrajudicial statement may be binding on the physician if it is an admission of negligence or lack of the skill ordinarily required for the performance of the work undertaken. But in reviewing a judgment of nonsuit, where the physician defendant's statements or inferences drawn therefrom conflict, the conflict must be resolved in favor of the patient. In other words, under such circumstances where the statements are reasonably susceptible to more than one meaning, the meaning to be placed on them is that meaning which is favorable to the plaintiff.

According to testimony adduced on behalf of the patient, the physician defendant stated that he should have had a roentgenogram taken "in the beginning" and that the fault in that respect was all his own. The jury would have a right to believe that

the defendant, as a physician, was using the word "should" to import the duty which he, as a physician practicing his profession, owed to his patient in the exercise of ordinary care. As is said in Webster (New Int. Dict., ed. 2):

> *Ought* and *should* express obligation, Ought commonly suggesting duty or moral constraint, Should, the obligation of fitness, propriety, expediency and the like.

Furthermore, continued the court, coupled with the defendant's statement as to what he should have done "in the beginning" is the admission that failure to have a roentgenogram taken was all his own "fault." The word "fault" in one of its meanings signifies "responsibility for wrongdoing or failure; culpable cause." (Webster's New Int. Dict., ed. 2): See also *Marston v. Pickwick Stages, Inc.* (1926), 78 Cal. App. 526, 248 P. 930. When the physician finally did have a roentgenogram taken it showed a "fracture of the base of the terminal phalanx whose shaft is markedly displaced." It does not require the testimony of an expert witness, under the conditions shown here, to support the conclusion that a piece of bone which is markedly displaced from the larger bone from which it has been detached is not in proper healing position. The roentgenogram ordered by the physician was not ordered and taken until Jan. 2, 1942, and on examining it the physician stated that "he didn't think after this length of time it would do any good to operate on [the finger]." The physician testified that "the condition of the finger was essentially" the same about the first of December as it was after January 2, the time when the roentgenogram was ordered by the physician, but at the earlier date, according to the patient's testimony, the defendant said "it wouldn't do any good to rush an operation." On cross examination the physician admitted that if he had had a roentgenogram taken in the early stages of his treatment he "would have been able to see that the fragment of bone was uniting or out of position" and that it would have made him suspicious that something was keeping it from uniting properly. Yet after the time to which such admission related the physician, still without requiring a roentgenogram, removed the splint to "see if it [the finger] would heal any better without it." When the physician originally splinted the finger, according to the plaintiff, he "left it crooked the way it was at that time," although he later admitted on the witness stand that he "knew the finger had to be splinted in full extension." It is true that he also testified that "the finger was brought up in as full extension as possible, and that is all that anybody can do to reduce that type of fracture." But, continued the court, the jury need not have believed that statement. That statement only created a conflict with the inferences to be drawn from the physician's admissions as to what should have been done in the beginning, as to his culpable negligence in not having a roentgenogram taken earlier, and as to his opinion in January 1942 that "he didn't think after this length of time it would do any good to operate." The implication of this latter statement would seem to be that an earlier operation would have benefited the patient and, hence, that the physician was mistaken in his statement that merely splinting the finger "in as full extension as possible . . . is all that anybody can do to reduce that type of fracture." An extrajudicial admission of "fault" may amount to no more than an admission of bona fide mistake or misfortune and thus be insufficient to establish negligence or it may support the inference that the patient was damaged as a proximate result of the physician's negligence.

In this case, continued the court, we are satisfied that a jury, considering the background of all the other evidence, could have reasonably concluded that the admissions of the physician imported that he had not exercised that reasonable degree of skill and learning and care ordinarily exercised by other physicians of good standing practicing in the community and that as a proximate result of that negligence the patient suffered injury. In other words, the admissions of the physician that he "should" have had a roentgenogram taken "in the beginning" and that he was "at fault" in that regard constitute evidence of a character competent to require that the issue of the physician's negligence be decided as a matter of fact by the jury.

For the reasons stated, the judgment of nonsuit entered by the trial court was reversed.—*Lashley v. Koerber, M.D., 156 P. (2d) 441 (Calif., 1945).*

Bureau of Investigation

SOME MISCELLANEOUS MEDICAL FRAUDS

A Variety of Schemes Debarred from the Mails

Fraud orders issued by the Post Office Department have frequently been the subject of extensive articles by the Bureau of Investigation in these pages of THE JOURNAL. Following are abstracts of two such fraud orders:

Graygone Vitamin Company.—This New York concern was one of the various firms advertising vitamin products to restore the original color to hair that has turned gray. The Post Office Department has debarred some such enterprises from the mails on the ground that they constituted frauds on the public. In this case, after a lengthy investigation, the Post Office cited the proprietor and sole owner, Elias A. Kahn, to show cause why similar action should not be taken against his business. Kahn appeared at the hearing held in Washington Oct. 26, 1944, but was not represented by counsel. On that occasion the Post Office Department presented evidence that Kahn and his concern had represented that their "Graygone Vitamin Tablets," when used as directed, would restore the "natural lustre and color" to gray hair, that it would remedy the deficiency which causes hair to turn gray, that "occasional use" of the product as directed would prevent the hair from graying, and that users would obtain results identical with or similar to those described in alleged testimonials included in the advertising. Kahn orally presented a general denial of the charge that these representations and promises were false and fraudulent. The Post Office inspector who had conducted the investigation of the case testified as to the claims made in the concern's literature regarding the ability of its product to restore the original color to gray hair. A medical officer of the Food and Drug Administration also testified for the government, stating that he was familiar with modern scientific teaching and opinion relative to nutrition, and to the use, value and functions of vitamins. He presented evidence that pantothenic acid (which, with calcium, the label of Graygone tablets declared to be present in the product) is one of the vitamins of the B-complex, that it has not been proved scientifically to be essential in the diet of humans or to be, through deficiency, the cause of any distinct disease entity. He further showed that pantothenic acid is widely distributed in common foodstuffs ordinarily used by the American public and that there is little likelihood of its being deficient in the normal American human diet. His further testimony was to the effect that the chief cause of gray hair lies in the natural aging processes of the human system with the passing of time, though the condition may also result from severe debilitating diseases, glandular disorders, undernourishment and some other causes. He cited a scientific experiment that he and other physicians had conducted to determine whether pantothenic acid had any value in the restoration of gray hair of human beings to the former natural and youthful color thereof, which tests had shown the contrary. Since the defendant in the case presented no valid contradictory testimony, a fraud order was issued on Jan. 3, 1945, debarring from the mails the Graygone Vitamin Company, also known simply as Graygone, together with one J. T. White, Sales Manager, and the officers and agents.

Victor Press.—Under this name a William J. Dubler, M.D., sold through the mails from Camden, N. J., an alleged treatment called the "Natural Health Method," which was publicized through a book called "Are Appendicitis Operations Necessary?" This represented that Dubler had "developed a new and revolutionary treatment for appendicitis, after nearly fifty years devoted to practice, study and research"; that the Method, "when used as directed, will cure acute and chronic appendicitis, and abscess of the appendix, without the use of drugs, operations or freezing; that the treatment was "a safe, certain, prompt and permanent cure for all cases, kinds and complications of appendicitis," and that persons suffering from this condition, whether acute or chronic, could cure themselves by self-treatment after reading the book five times. Dubler was graduated from Baltimore University School of Medicine in 1898, and in 1899 obtained a license to practice medicine in New Jersey, which was reported in 1942 to have been indefinitely suspended because of a charge against him of fraudulent advertising. As long ago as 1913 he was advertising himself as an "Office Specialist" in Atlantic City newspapers. He has also advertised in *Physical Culture* and, for a time, at least, conducted "Dr. Dubler's Private Sanatorium and Natural Health School" at Camden, which advertised "No Drugs—No Serums—No X-Rays—No Radium—No Operations." After the Post Office Department had investigated his recent activities, it summoned him to a hearing in Washington, to show cause why he should not be debarred from the mails on the charge of obtaining money under false and fraudulent pretenses. At the hearing a Senior Medical Officer of the Food and Drug Administration testified for the government, showing that he had had extensive experience in studying and treating various types of appendicitis, including the surgical treatment thereof. He discussed the various forms that the disease takes and their scientific treatment, without which, he showed, the condition can be extremely dangerous. Further, he pointed out the risk to an appendicitis patient in following Dubler's advice. This advice, Dubler admitted, differed in every phase from orthodox medical opinion. His testimony frequently was evasive and uncertain as to medical matters incident to his diagnosis and treatment of appendicitis, and he frequently confessed ignorance of medical facts relating thereto. Further, he admitted that he had served a sentence in a Pennsylvania prison for "conspiracy to perform abortions." The findings in the case were that the charges against Dubler were entirely sustained by the evidence, and on July 13, 1944, a fraud order was issued against William J. Dubler, the Victor Press, and their officers and agents.

Current Medical Literature

AMERICAN

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Titles marked with an asterisk (*) are abstracted below.

* American J. Obstetrics and Gynecology, St. Louis

50:235-352 (Sept.) 1945. **Partial Index**

*Effect on Infant Mortality of Vitamin K Administered During Labor. Edith L. Potter.—p. 235.
Conservative Management of Some Varieties of Placenta Previa. H. W. Johnson.—p. 248.
Results of Various Types of Treatment in Adenocarcinoma of Endometrium. C. E. McLennan.—p. 254.
Studies in Amenorrhea, Oligomenorrhea and Anovulomenorrhea: I. Effect of Equine Gonadotropin on Establishment of Cyclic Menses and Ovulation. A. R. Abarbanel and J. H. Leathem.—p. 262.
*Comparative Study of Clinical Responses of Women with Hypofunctioning Ovaries to Two Methods of Combined Gonadotropic Therapy. C. D. Davis and E. C. Hamblen.—p. 269.
Carcinoma of Cervix Complicated by Pregnancy. J. R. Willson.—p. 275.
Primary Carcinoma of Fallopian Tube. R. M. Mitchell and R. W. Mohler.—p. 283.
Aquinone During Labor: Its Effect on Prothrombin Level of Newborn Infant. H. E. Schmitz and G. Baba.—p. 292.
Blood Pressure in Normal Pregnancy. G. J. Andros.—p. 300.
Caudal Analgesia in Obstetrics, with Special Reference to Repeated Single Blocks. B. J. Hanley and C. M. Malone.—p. 306.
Continuous Caudal Analgesia in Obstetrics on Trial. R. E. Nicodemus, L. F. Ritmiller and L. J. Ledden.—p. 312.
Use of Fine Chromic Catgut for Postpartum Perineal Repair. E. G. Waters.—p. 319.
Rh Factor in Obstetrics. J. Halperin, M. Jacobi and A. Dubin.—p. 326.
Rupture of Uterus. J. H. Morrison and L. H. Douglass.—p. 330.
Treatment of Trichomonas Vaginitis with Sulfonamide Compound. Helen M. Angelucci.—p. 336.
Transmission of Penicillin to Amniotic Fluid and Fetal Blood in the Human. J. H. E. Woltz and H. A. Zintel.—p. 338.

Vitamin K and Infant Mortality.—Potter reports a study of two groups of infants: one of 6,560 infants weighing over 1,000 Gm. born in the two year period when vitamin K was given to the women before delivery and a group of 6,630 infants born during the next twenty-two months when vitamin K was not administered. The total fetal and infant mortality rate per thousand births of 29.8 for the first two years is higher than that of 25.8 for the last two years in spite of the fact that no change of significance occurred in the incidence of primiparity, premature delivery, mode of delivery or other known factor. The mortality rate for liveborn infants is identical in the two series, as is the number of infants who showed evidence of hemorrhage on postmortem examination. Potter concludes that no decrease in infant or fetal mortality can be expected to result from the routine administration of vitamin K.

Responses to Gonadotropic Therapy.—Davis and Hamblen have shown that the sequential and cyclic administration of equine and chorionic gonadotropins (one-two cyclic gonadotropic therapy) restores to a fertile status a significant number of women with hypofunctioning ovaries. A commercial product which contains both pituitary synergist and chorionic gonadotropin is now available for therapeutic use. The authors report a comparative study of the two methods of treatment in 21 patients who are placed into four clinical groups: (1) those with deficient sexual maturation whose menarches had not occurred (4 patients), (2) those with infrequent and/or scanty estrogenic bleeding (6 patients), (3) those with prolonged and/or excessive estrogenic bleeding (5 patients) and (4) those with presumed ovarian sterility associated with bleeding from immature progestational endometriums (6 patients). The primary criterion for an evaluation of these responses was a study of endometrial biopsies taken prior to and following treatment. None of the patients with deficient sexual maturation responded to either therapy. Patients with infrequent and/or scanty estrogenic bleeding and those with prolonged and/or excessive estrogenic bleeding responded to both therapies. More positive responses were associated with one-two cyclic gonadotropic therapy. No pregnancies were associated with either therapy in the group of patients with presumed ovarian sterility associated with bleeding from immature progestational endometriums. The authors conclude that cyclic therapy with a preparation containing "pituitary synergist" and chorionic gonadotropin (30 "synergy units" intramuscularly daily from the fifth through the twenty-fourth day of the cycle) may produce progestational endometriums in patients experiencing various grades of estrogenic bleeding. This therapy yields a lower incidence of positive responses than one-two cyclic gonadotropic therapy, which employs singly and sequentially equine and chorionic gonadotropins.

Annals of Surgery, Philadelphia

122:289-448 (Sept.) 1945

Reparative Surgery of Compound Battle Fractures in Mediterranean Theater of Operations. O. P. Hampton Jr.—p. 289.
Management of Intrathoracic and Thoracoabdominal Wounds in Combat Zone. H. E. Snyder.—p. 333.
Combined Injuries of Thorax and Abdomen. C. S. Welch and J. E. Tuhy.—p. 358.
*Compound, Comminuted Skull Fractures Produced by Missiles: Report Based on 100 Cases. E. H. Campbell Jr.—p. 375.
Surgical Management of Colon and Rectal Injuries in Forward Areas. L. E. Hurt.—p. 398.
*Management of War Injuries of Extraperitoneal Rectum. E. J. Croce, V. S. Johnson and T. B. Wiper.—p. 408.
Simultaneous Occurrence of Acute Appendicitis and Malaria. I. S. Ravdin and J. P. North.—p. 432.
Right Paraduodenal Hernia. F. H. Lahey and W. Trevor.—p. 436.
Benign Capillary Hemangioma of Digital Flexor Tendon Sheath: Case Report. G. V. Webster and C. F. Geschickter.—p. 444.

Skull Fractures.—Summarizing his observations on 100 cases of compound comminuted fractures of the skull, Campbell says that inner table fractures were sometimes overlooked and occasionally led to serious complications. Tripod incisions often gave trouble; it is recommended that they be avoided when possible. Convulsions were uncommon in the first few weeks; their occurrence was sometimes an early manifestation of abscess formation. Subdural hematoma was present in but 2 cases. Superficial wound infections of varying degrees developed in 19 cases, while in 22 the infections were deep seated. These were manifested by abscess, meningitis or cerebral fungus. There were five deaths, all of which occurred in the latter group. Incomplete débridement was the largest single factor contributing to wound infection. In those cases in which all bone fragments had been removed infection was uncommon and seldom deep, whereas if débridement had been incomplete or not performed infection was common and usually deep. Bacteria cultured from these wounds were principally skin inhabitants of low virulence. Treatment consisted in evacuation of pus and removal of associated bone fragments and/or metallic foreign bodies as well as of adjacent necrotic tissue and old blood. Abscess capsules were disturbed as little as possible. Sulfonamide therapy was employed as an adjuvant. Failures resulted only in those 5 cases in which, for one reason or another, this procedure was not carried out. Experience, judgment and skill, as well as the proper neurosurgical armamentarium, are prerequisite to good primary débridement.

Injuries of Extraperitoneal Rectum.—Croce and his associates treated patients in various stages of convalescence from war wounds of the rectum. They feel that progress has been made during this war in the management of extraperitoneal injuries of the rectum. They emphasize the part played by surgical prophylaxis in contrast to the supportive measures of blood, plasma and chemotherapeutic agents. The latter may influence the early mortality rate in assisting recovery from shock but not the morbidity or late mortality from chronic sepsis. These supportive measures have proved to be merely adjuvants and not substitutes for early and properly executed surgery. The authors stress the following points: 1. Perforation of the infraperitoneal portion of the rectum results in fecal contamination of the cellular tissue of the infraperitoneal space. This space communicates with the retroperitoneal space posteriorly over the sacrum and may thus result in fulminating and widespread retroperitoneal sepsis. 2. Even if the perforation cannot be located but there is presumptive evidence of its presence or potential development from contusion or infarct of the rectum

as judged from the course of the missile and the presence of a large hematoma in the infraperitoneal space, an effective sigmoid colostomy should be established at once. 3. A sigmoid colostomy alone will not prevent infection of the infraperitoneal space, although the infection is likely to be less widespread and fulminating. In addition, the infraperitoneal perirectal space must be saucerized by coccygectomy and loosely packed. 4. Mere saucerization of the perirectal space, while life saving and prophylactic against spreading retroperitoneal sepsis, is not ideal treatment. Unless the perforation is located and closed, a persistent fistula may develop.

Archives of Otolaryngology, Chicago

42:91-156 (Aug.) 1945

Otologic Research in Britain: Notes on Its Progress. C. S. Hallpike.—p. 91.
Labyrinthitis Following Purulent Infection of Middle Ear: Histopathologic Studies. F. Altmann and J. G. Waltner.—p. 93.
Physiologic Effect of Pressure Changes with Reference to Otolaryngology. A. R. Behnke.—p. 110.
Structure of External Nose: Study from Point of View of Plastic Surgery. B. L. Griesman.—p. 117.
Otitis Externa and Its Treatment. E. Simon.—p. 123.
Fracture Dislocations of Cartilaginous Nose: Anatomicopathologic Considerations and Treatment. J. W. Maliniac.—p. 131.
Tests for Unilateral Deafness. R. E. Priest.—p. 138.
Deafness: Its Causes and What Can Be Done About It. M. H. Lurie.—p. 144.

Archives of Pathology, Chicago

40:81-140 (Aug.) 1945

Sulfhydryl Protection of Liver. A. Brunschwig, S. Nichols, R. R. Bigelow and J. Miles.—p. 81.
Hematuria Due to Papillary Hemangioma of Renal Pelvis. A. E. Rappoport.—p. 84.
Cancerous Synovial Tumors. P. H. Hartz.—p. 88.
*Diffuse Hepatic Necrosis Caused by Sulfadiazine. P. A. Herbut and T. M. Scaricaciottoli.—p. 94.
*Cystic and Compact Pulmonary Sclerosis in Progressive Scleroderma. Sophia Getzowa.—p. 99.
Mixed Tumors of Skin: Report of Cases, with Consideration of Histogenesis of Mixed Tumors of Organs Derived from Ectoderm. R. P. Morehead.—p. 107.
Rh Blood Factors: Orientation Review. W. C. Boyd.—p. 114.

Hepatic Necrosis Caused by Sulfadiazine.—Herbut and Scaricaciottoli report 2 cases of acute diffuse hepatic necrosis resulting from sulfadiazine therapy. In 1 case sulfonamide compounds had not previously been given, whereas in the other a course of treatment with sulfadiazine had been given one month before a second course was administered. It is thought that while focal hepatic necrosis may result from direct chemical action of the sulfonamide compounds on the liver cells, diffuse hepatic necrosis may be the result of inherent or acquired hypersensitivity of the liver to the drug. Of the two types of renal damage ascribed to the sulfonamide compounds, the authors believe that the type in which crystals or concretions are found in and beyond the renal tubules is due to the direct action of the sulfonamide compounds on the kidney. The more severe form, showing tubular necrosis, casts and interstital congestion and edema, with foci of inflammatory cells, is due to the accompanying disease process, which may be infection, intestinal obstruction, jaundice or some other condition and not to direct action of the drug on the renal parenchyma. The 2 cases reported here emphasize the fact that sulfadiazine should be used cautiously.

Pulmonary Sclerosis in Progressive Scleroderma.—Getzowa observed peculiar cystic changes in the lungs in 2 cases of scleroderma. These cases showed disappearance of alveolar tissue in the lung as a result of two distinct processes: lysis of the alveolar walls and progressive sclerosis. Cystic pulmonary sclerosis occurred with a hyaline or hyaline fibrous process involving the alveolar walls, accompanied by the disappearance of capillaries superimposed on generalized diffuse simple fibrosis of the alveolar walls. After dissolution of the hyaline portions of the walls, the process led to disappearance of alveolar parenchyma. After a preliminary fibrous stage the alveolar parenchyma was replaced by cystically enlarged bronchiolar proliferations, a process for which the name "cystic bronchiolar hyperplasia" is proposed. The cysts are present in the subpleural zones with the exception of the apexes and the hilar regions. Compact pulmonary sclerosis developed on the basis of diffuse alveolar fibrosis of a progressive nature with disappearance of capillaries and parenchyma, owing to progressive narrowing of alveoli. There was no dissolution. The capillaries persisted and with them the alveoli, and extensive interalveolar fibrosis developed. The bronchi and bronchioli which remained intact in the fibrous areas were surrounded by peribronchial proliferations forming adenoma-like zones.

Bulletin of Johns Hopkins Hospital, Baltimore

77:1-82 (July) 1945

*Salicylate and Rheumatic Activity: Objective Clinical Histologic Study of Effect of Salicylate on Rheumatic Lesions, Those of Joints and Tendon Sheaths in Particular. G. E. Murphy.—p. 1.
Hypersensitivity to Iodine as Cause of Periarteritis Nodosa. A. R. Rich.—p. 43.
Poliomyelitic Changes in Multinucleated Neurons, with Special Reference to Site of Action of Virus in Cell. D. Bodian.—p. 49.
Dietary Role of Histidine in Immature and Adult Rat. A. A. Albanese and Jane E. Frankston.—p. 61.

Salicylate and Rheumatic Activity.—Murphy studied the clinical course and histologic character of rheumatic lesions in 12 actively rheumatic patients treated with large doses of salicylate. In 6 patients the size of involved joints and in 6 patients the size and skin temperature of the involved joints were followed by direct measurement in an attempt to determine the effect of salicylate on the local rheumatic inflammation. The results in this small series of cases do not support the widely accepted view that salicylate reduces rheumatic joint inflammation. In several of these patients characteristic rheumatic lesions developed in a variety of sites during the course of salicylate therapy. In 2 cases tendon sheath nodules developed with serum salicyl levels above 300 and 450 micrograms per cubic centimeter respectively. In another case a tenosynovitis developed with the serum salicyl level between 350 and 265 micrograms per cubic centimeter. A florid rheumatic pneumonitis developed in a fatal case with the serum salicyl level above 300 micrograms per cubic centimeter. Another striking finding at necropsy in this case was the fresh fibrin thrombi in the capillaries of practically every glomerulus in sections of both kidneys. In a fifth patient an episcleral nodule developed with the serum salicyl level between 450 and 600 micrograms per cubic centimeter. In a sixth patient joint rheumatic activity became manifest for the first time during the course of heavy salicylate therapy (after fifteen days of large doses of salicylate) associated with electrocardiographic evidence of increased cardiac rheumatic activity.

Cancer Research, Baltimore

5:497-560 (Sept.) 1945

Some Influences of Hormones on Growth and Persistence of Transplanted Testicular Tumors. W. U. Gardner.—p. 497.
Incidence of Adrenal Cortical Carcinoma in Male Mice of Extreme Dilution Strain Over One Year of Age. G. W. Woolley and C. C. Little.—p. 506.
Estrogen Production by Sertoli Cell Tumors of Testis. C. Huggins and P. V. Moulder.—p. 510.
Induction and Prevention of Fibromyoepithelioma of Utricular Bed in Male Guinea Pigs. A. Lipschütz, D. Yanine, J. Schwarz, S. Bruzzone, J. Acuña and S. Silberman.—p. 515.
Potential Differences in Skin of Mice During Carcinogenesis. H. Burrows, Edna M. F. Roe and B. Schober.—p. 524.
Statistical Analysis of 2,407 Admissions to Tumor Clinic of Veterans Hospital, Hines, Ill., During 1943. R. Schrek and G. R. Allaben.—p. 539.

Connecticut State Medical Journal, Hartford

9:587-676 (Aug.) 1945

Industrial Rehabilitation. A. J. Jackson.—p. 600.
Comment on Industrial Rehabilitation. E. S. Wayland.—p. 602.
Scrub Typhus. J. Mignone and T. C. Seymour.—p. 604.

9:679-754 (Sept.) 1945

Some Recent Advances in Control of Infectious Diseases. F. G. Blake.—p. 679.
Ten Year Report of Tumor Registry of Yale University School of Medicine: Based on Total Admission for Cancer to New Haven Hospital, 1935-1944. Mary C. MacDonald.—p. 687.
How Dangerous to the Community are State Hospital Patients? L. H. Cohen and H. Freeman.—p. 697.
Note on Sciatica, Backache and Intervertebral Disks. P. P. Swett.—p. 701.
Electric Shock Therapy: Its Use in General Hospital. A. H. Jackson.—p. 703.

Diseases of Chest, Chicago

11:375-496 (Sept.-Oct.) 1945

Analysis of 100 Cases of Minimal Pulmonary Tuberculosis. H. O. Puelma and G. Grebe.—p. 375.
Loeffler's Syndrome (Transient Pulmonary Infiltrations with Eosinophilia): Report of Case and Review of Available Literature. H. I. Spector.—p. 380.
Bronchoscopy in Pulmonary Tuberculosis. R. Tapia Acuña.—p. 392.
Introduction: Refresher Course on Diseases of Chest. M. Joannides.—p 398.
Present Status of Tuberculosis in Children. A. S. Webb.—p. 399.
Management of Minimal Tuberculosis. J. B. Novak.—p. 405.
Pregnancy in Tuberculosis. F. M. F. Meixner.—p. 409.
Chemotherapy of Tuberculosis. C. K. Petter.—p. 419.
Indications for Collapse Therapy. R. Davison.—p. 423.
Recent Advances in Bronchoscopic Technic. P. H. Holinger.—p. 427.
Treatment of Bronchiectasis. E. R. Levine.—p. 431.
Surgical Procedures in Nontuberculous Diseases. R. B. Bettman.—p. 440.

Journal of Nervous and Mental Disease, New York

102:221-326 (Sept.) 1945

Therapeutic Efficacy of Electroconvulsive Therapy: Comparative Classification of Treatment Results Determined With and Without Use of Time Factor in Their Evaluation. G. H. Alexander.—p. 221.
Electroshock Therapy, with Special Reference to Relapses and Effort to Prevent Them. E. F. Kerman.—p. 231.
Outcome in Dementia Precox Under Electric Shock Therapy as Related to Mode of Onset and to Number of Convulsions Induced. L. Lowinger and J. H. Huddleson.—p. 243.
Neurogenic Pulmonary Edema Due to Puncture Wound of Medulla Oblongata. B. Schlesinger.—p. 247.
*Chronic Delirium as Terminal Manifestation of Organic Dementia. M. Levin.—p. 256.
Macrosterognosia: Unusual Phenomenon in Case of Thalamic Syndrome. L. Halpern.—p. 260.
Cultural Influences in Alcoholism. R. S. Banay.—p. 265.
Pyknolepsy, with Report of Its Occurrence in Case of Schizophrenia. J. M. Schneck.—p. 276.
Physical Manifestations in Mental Disease. G. N. Thompson.—p. 280.
Acute Psychosis Following Therapeutic Malaria in Case of Neurosyphilis: Report of Case. L. I. Kaplan, D. J. Flicker, F. T. Becker and H. S. Read.—p. 285.
Coprophagy in Absence of Insanity: Case Report. M. M. Kessler and G. E. Poucher.—p. 290.
Frequency of Blinking in Mental Illness: Measurable Somatic Aspect of Attitude. M. Ostow and Miriam Ostow.—p. 294.

Chronic Delirium in Organic Dementia.—Patients with organic dementia who become delirious are divided into two groups by Levin. In one group the delirium is produced by a toxemia. Here the delirium comes on acutely and clears up after the patient has been rid of his toxemia. In the other group the delirium is unrelated to any toxemia; it comes on furtively after the dementia has reached a certain degree of severity and, once established, persists months and even years until death. It is a mistake to say that delirium is always transitory. It is a symptom of damage to the highest cerebral centers and is transitory if that damage is toxic and reversible but is permanent if the damage is destructive and irreversible. The psychiatric picture of senile delirium and of paralytic delirium is in all essential respects indistinguishable from that of toxic delirium. The distinction between toxic and senile (and between toxic and paralytic) delirium can be made only in the light of the history, the presence or absence of toxemia and the outcome.

Journal of Nutrition, Philadelphia

30:151-224 (Sept.) 1945

Requirement of Turkey Poult for Vitamin B6. L. R. Richardson, A. G. Hogan and H. L. Kempster.—p. 151.
Vitamin A and Carotene in Nutrition of Guinea Pig. Lillian S. Bentley and Agnes F. Morgan.—p. 159.
Nutritional Studies on Milk Fat: I. Growth of Young Rats Fed Milk Fat and Certain Synthetic Glycerides as Supplements to Fat Free Diet. J. L. Henderson, E. L. Jack, S. Lepkovsky and Della F. Reid.—p. 169.
Id.: II. Growth of Young Rats Fed Glyceride Fractions Separated from Milk Fat. E. L. Jack, J. L. Henderson, Della F. Reid and S. Lepkovsky.—p. 175.
Enzymatic Relationships in Utilization of Soybean Oil Meal Phosphorus by Rat. R. R. Spitzer and P. H. Phillips.—p. 183.
Physiologic Availability of Vitamins: III. Effect of Dietary Ascorbic Acid Oxidase. M. Hochberg, D. Melnick and B. L. Oser.—p. 193.
Id.: IV. Inefficiency of Live Yeast as Source of Thiamine. M. Hochberg, D. Melnick and B. L. Oser.—p. 201.
Estimation of Relative Nutritive Value of Vegetable Proteins by Two Chemical Methods. R. J. Evans and J. L. St. John.—p. 209.
Observations on Monomethylaminoethanol and Dimethylaminoethanol in Diet of Chicks. T. H. Jukes, J. J. Oleson and A. C. Dornbush.—p. 219.

Michigan State Medical Society Journal, Lansing

44:941-992 (Sept.) 1945

Cooperation Between Industrial Physicians, Industrial Medicine and Private Practitioners. W. B. Harm.—p. 941.
Cooperation Between Industrial Physicians and Private Practitioners. E. A. Irvin.—p. 945.
Selective Placement of Workers: Personnel Manager's Viewpoint. O. L. Beardsley.—p. 949.
Health Maintenance Engineering in Relation to Industrial Health. R. P. Warren.—p. 952.

Military Surgeon, Washington, D. C.

97:177-264 (Sept.) 1945

Use of Medical Units in Amphibious Landing. W. J. Shaw.—p. 177.
Two Years of Cooperation in Military Venereal Disease Control. E. H. Harris and R. H. Abrahamson.—p. 184.
Extraperitoneal Closure of Colostomy: Report of 15 Cases. L. S. Pilcher and O. E. Nadeau.—p. 190.
Diagnosis and Treatment of Internal Derangements of Knee Joint. J. C. Pickett.—p. 198.
Skin Grafting. J. G. Kostrubala.—p. 203.
Hypertension in Army General Hospital. M. D. McFarland.—p. 209.
Observations on Physiology, Metabolism and Treatment of Severe Burn. S. H. Sturgis.—p. 215.
*Observations on "Jungle Rot." J. S. Travis.—p. 224.
The Commoner Dermatoses Observed in the Italian Theater. I. I. Lubowe.—p. 225.
With the Army on Okinawa. R. R. Beck.—p. 232.

"Jungle Rot."—According to Travis the term "jungle rot" is a misnomer for fungous infections of varied etiology in the tropics. The characteristic lesion is a circular pustule varying in size from ⅛ to ½ inch, with a distinct elevation of the superficial layers of skin. The usual sites are the axillas, the adjacent surfaces of the upper part of the arm and the groin. The lesions apparently spread by extension to contiguous surfaces and show progressive outcroppings, some being frankly bullous and others simply papular in the early stages. Some of these lesions have been in existence for six weeks despite medical attention. Travis was able to cure approximately 50 such cases in from four to six days by means of a mixture of alkyl dimethyl benzyl ammonium chlorides. The circinate, pustular bleb is incised with a lancet scalpel after primary skin antisepsis with a dilution of the mixture. The superficial ulceration is rubbed with the mixture on a cotton tipped applicator. This process is repeated two times daily for approximately two days. By the third day treatment is nearing completion and lesions heal by primary intention.

New Orleans Medical and Surgical Journal

98:91-144 (Sept.) 1945

*Ruptured Uteri: Analytical Report of 64 Cases Managed at Charity Hospital of Louisiana at New Orleans, with Review of Literature. W. D. Beacham and G. A. Varino.—p. 91.
Rupture (Intraperitoneal, Intraintestinal and Intravesical) of Suppurative Pelvic Masses, with Analysis of 43 Cases from Charity Hospital of Louisiana at New Orleans. H. E. Miller.—p. 115.
Infiltration Therapy of Subacromial Bursitis with Calcification. I. W. Kaplan and B. L. Hawkins.—p. 123.
Tularemia. R. L. Pullen and B. M. Stuart.—p. 126.

Ruptured Uterus.—Beacham and Varino review 64 cases of rupture of the pregnant uterus occurring from 1912 to 1941 at the Charity Hospital of Louisiana at New Orleans. The high maternal mortality (60.93 per cent) and fetal fatality (73.43 per cent) in this and other large hospital series can be explained in part on the basis that complicated and mismanaged labors gravitate to hospitals. Forty-five of the Charity Hospital cases were designated as emergencies at the time of admission. Evidence of shock during or following labor should call for a prompt consideration of the possibility of ruptured uterus. Rupture of the uterus after "low" cesarean section is rare. Nevertheless, every woman who has undergone a cesarean operation must receive close supervision during each subsequent pregnancy. Classic section cicatrices are particularly vulnerable to rupture, providing foundation for the statement "once a classic section always a section." A woman in this group had undergone one classic and two low operations. Rupture occurred at the site of the classic incision. Uterine rupture subsequent to myomectomy is rare. Rupture of the uterus requires immediate therapeutic action. This series and a study of reported cases substantiate the belief that hysterectomy is the procedure of choice. The administration of blood and in many cases of plasma also, with other anti-shock measures, is of great value.

New York State Journal of Medicine, New York

45:1807-1918 (Sept. 1) 1945

Incidence of Carditis in Rheumatoid Arthritis. W. Feiring.—p. 1855.
*Vitamin E in Treatment of Myopathies: Preliminary Reports on Its Topical Use in Fibrositis. M. Ant.—p. 1861.
Hemangioma of Mediastinum Causing Death in Newborn. V. W. Bergstrom.—p. 1867.
Traumatic Biliary Cyst of Lesser Sac (Omental Bursa): Operation; Recovery. G. D. Nammack, F. H. Herrman and S. Hirsch.—p. 1871.
Obliterative Arteritis in Fingers Due to Occupational Trauma. J. Van Duyn.—p. 1873.

45:1919-2030 (Sept. 15) 1945

Principles in Treatment of Chronic Headache. A. P. Friedman and C. Brenner.—p. 1969.
Essential Approach to Rehabilitation. D. R. Salmon.—p. 1972.
Evaluation of Ectopic Pregnancy with Selective Data from 127 Consecutive Cases. S. L. Siegler.—p. 1974.
Penicillin and Other Antibiotics as Chemotherapeutic Agents in Wound Infections. E. Neter.—p. 1982.
Crisis in Addison's Disease Precipitated by Acute Appendicitis. P. Leavitt.—p. 1987.
Postpartum Intestinal Obstruction Due to Adhesion Bands. A. L. Henkin.—p. 1989.
Epidemic Keratoconjunctivitis Cured Through Combination of Penicillin and Sulfasuxidine. M. Jacobson and N. W. Levin.—p. 1990.

Vitamin E in Fibrositis.—Thirty-one patients were treated with vitamin E in the form of an ointment which contained 30 per cent of solvent-extracted wheat germ oil. Of these 31 patients 19 received inunction therapy only. In 6 the external application was supplemented by the oral administration of 3 mg. capsules of mixed tocopherols daily. In 4 the external application was supplemented by a diet high in vitamin E (green leafy vegetables, lettuce and whole wheat bread). Only 1 patient received all three measures, 1 received oral therapy alone and the other oral therapy with a high vitamin E diet. The patients ranged in age from 28 to 66 years; 8 were women and 24 men. The symptoms had been present for three weeks to five years. In some cases the condition affected only a small area, such as both hands; in others much greater areas were involved. Treatment lasted from two to sixteen weeks. Improvement was pronounced in 20 cases, fair in 9 and absent in 3 cases. Of the cases in which only inunction therapy was administered more than two thirds showed excellent results, the others fair improvemt. The less favorable results obtained in those receiving other forms of vitamin E therapy indicate that oral and other therapy is not the determining factor in reenforcing the action of external application of vitamin E.

Surgery, Gynecology and Obstetrics, Chicago

81:337-356 (Oct.) 1945

*II. Value of Vaginal Smear in Diagnosis of Uterine Cancer: Report of 1,015 Cases. J. V. Meigs, Ruth M. Graham, M. Fremont-Smith, L. T. Janzen and C. B. Nelson.—p. 337.
Operative Technic of Complicated Vesicovaginal and Urethrovesicovaginal Fistulas. S. N. Hayes.—p. 346.
Saphenofemoral Ligation with Immediate Retrograde Injection. H. O. McPheeters.—p. 355.
Absorbable Gelatin Sponge and Thrombin for Hemostasis in Neurosurgery: Experimental and Clinical Observations. C. Pilcher and W. F. Meacham.—p. 365.
Excision of Fractured Patella. A. A. Schmier.—p. 370.
Inactivation of Penicillin by Various Gram Negative Bacteria. W. A. Altemeier.—p. 379.
Irreducible Intussusception in Infants: Report of 2 Successful Primary Resections. L. S. Fallis and K. W. Warren.—p. 384.
Surgical Aspect of Intestinal Amebiasis. P. Hawe.—p. 387.
Surgical Treatment of Injuries of Brain, Spinal Cord and Peripheral Nerves. J. E. Scarff.—p. 405.
*Thiouracil—Its Use in Preoperative Treatment of Severe Hyperthyroidism. F. H. Lahey, E. C. Bartels, S. Warren and W. A. Meissner.—p. 425.
Esophagogastrostomy in Treatment of Cardiospasm. O. T. Clagett, H. J. Moersch and A. Fischer.—p. 440.
Chondromalacia of Patella. E. F. Cave, C. R. Rowe and L. B. K. Yee.—p. 446.
Changes in Chronaxia During Degeneration and Regeneration of Experimentally Produced Lesions of Sciatic Nerve of Cat. L. J. Pollock, J. G. Golseth and A. J. Arieff.—p. 451.
Experimental Cholecystitis: Final Results of Vaccine and Filtrate Therapy. M. E. Rehfuss and G. M. Nelson.—p. 455.

Vaginal Smear in Diagnosis of Uterine Cancer.—In 1943 Meigs and his associates reported 220 cases studied for cancer by vaginal smear. Since then the authors have studied an additional 795 cases, making a total of 1,015 cases, with a total error of 4 per cent. The patients for this study came from the Vincent Memorial wards and the Tumor Clinic of the Massachusetts General Hospital and from the private practices of several physicians. In this series of 1,015 cases microscopic section revealed cancer in 154. Of these 154 positive cases 16 were incorrectly called negative by vaginal smear. This is an error of 10.3 per cent. The mistakes in this group of cases fall into two categories. The first includes smears in which cancer cells were present but were not seen on the original examination of the slide. These cells were missed because not every field was examined. Seven of 16 mistakes were of this type. The second group are those in which no cancer cells were found, even after the slides were reviewed. We must assume that in these 9 instances malignant cells did not exfoliate or that degeneration of the malignant cells had occurred. To illustrate the value of the vaginal smear in the early diagnosis of cancer the authors present 8 cases diagnosed primarily by vaginal smear. They stress that the vaginal smear and biopsy are complementary technics which, used together, will enhance the effectiveness of the diagnostic clinic. Large numbers of women may be screened and those with positive smears studied further by biopsy. The authors do not regard a negative smear as excluding cancer, nor do they regard a positive smear, without biopsy corroboration, as an indication for surgery.

Thiouracil in Preoperative Treatment of Hyperthyroidism.—Lahey and his collaborators employed thiouracil in the preoperative management of 190 severely toxic hyperthyroid patients. Both types of hyperthyroidism were represented in this group—primary hyperthyroidism, and adenomatous goiter with hyperthyroidism. Response to thiouracil therapy was equally satisfactory in the two groups. In the first 100 patients treated there were 85 females and 15 males. The average age was 45 years. Forty-four patients were over 50 years of age. Almost half, 43 patients, had had hyperthyroidism for more than two years. The average basal metabolic rate was +49; 54 patients had initial rates over +45. Only those with hyperthyroidism and associated heart failure or those extremely ill from hyperthyroidism were admitted to the hospital. In the former group, combined cardiac and thiouracil treatment was begun, and when cardiac compensation was restored after ten to fourteen days these patients were discharged to carry on treatment at home. In the latter group improvement was usually sufficient after seven to ten days to permit continuance of treatment at home. For most patients thiouracil treatment is ambulatory throughout. Thiouracil was administered in a total daily dose of 0.6 to 0.2 Gm. at 7 a. m., 2 p. m. and 9 p. m. It has been found that approximately one day of treatment with 0.6 Gm. of thiouracil is required for each percentage of elevation in the basal metabolic rate. When the first patients receiving thiouracil underwent thyroidectomy the thyroid gland was found to be soft and friable, and bleeding of the entire operative site was so extensive that it was difficult to keep the field sufficiently dry to carry out the usual surgical technic. The friability of the thyroid gland was overcome when Lugol's solution was administered during the three week period immediately before operation. For two weeks the iodine and thiouracil were administered simultaneously, and during one week preoperatively the thiouracil was discontinued and only iodine administered. Toxic manifestations developed in 23 patients receiving thiouracil. The reactions consisted of granulocytopenia in 9 patients, fever reactions in 7, skin eruption in 4, scleredema in 2 and swelling of the salivary glands in 1. Leukopenia with granulocytopenia is the most serious and alarming of all the reactions. Four patients developed the clinical picture of agranulocytic angina, 2 mild and 2 severe; 1 of the latter patients died. The occurrence of toxic reactions in 11 per cent of the patients indicates the necessity of careful observation during treatment.

War Medicine, Chicago

8:73-136 (Aug.) 1945

Mechanics of Blast Injuries. M. W. Young.—p. 73.
Physical Examination of Applicants for Commission: Observations and Impressions. J. W. Hall Jr. and F. K. Hick.—p. 82.
Narcosynthesis in Treatment of Noncombatant Psychiatric Casualty Overseas. M. F. Greiber.—p. 85.
Mechanism of Wounding. E. N. Harvey, E. G. Butler, J. H. McMillen and W. O. Puckett.—p. 91.
Incidence of Shigellas and Salmonellas Isolated from American Military Personnel in Egypt: Bacteriologic Analysis. B. Heinemann.—p. 105.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

4:71-86 (June) 1945

Gold Treatment in Rheumatoid Arthritis. T. N. Fraser.—p. 71.
Effect of Penicillin on Rheumatoid Arthritis. E. W. Boland, N. E. Headley and P. S. Hench.—p. 76.
Investigation Into Etiology and Pathology of Fibrositis of Back. W. H. Mylechreest.—p. 77.
Some Orthopedic Aspects of Rheumatic Disease. A. G. Timbrell Fisher. —p. 80.
Rheumatic Fever in Malta: Clinical Note. R. E. Tunbridge and W. S. C. Copeman.—p. 85.

British Journal of Dermatology and Syphilis, London

57:125-168 (July-Aug.) 1945

Consideration of Psychosomatic Factors in Etiology of Some Skin Diseases. G. A. Hodgson.—p. 125.
Linear Comedo Nevus and Ichthyosis: Case Report. F. Piers.—p. 138.
Acne and Sleep. E. L. Cohen.—p. 147.
Dermatitis Herpetiformis: Failure to Respond to Penicillin. R. G. Park.—p. 151.

Lancet, London

2:261-292 (Sept. 1) 1945

Obscure Neuropathy in Middle East: Report of 112 Cases in Prisoners of War. J. D. Spillane and G. I. Scott.—p. 261.
*Gas Gangrene: Thirty-Three Cases, with One Death, Treated at Forward General Hospital in Italy. W. C. Gledhill.—p. 264.
Air Evacuation in Northwest European Campaign. K. D. Stewart. —p. 270.
*Sequelae of Cerebrospinal Meningitis: Analysis of 60 Cases. S. I. Ballard and H. G. Miller.—p. 273.
Starvation in Western Holland: 1945. G. C. E. Burger, H. R. Sandstead and J. Drummond.—p. 282.

Gas Gangrene.—Gledhill reviews observations on 33 cases of gas gangrene that were seen at a forward general hospital in Italy between September and November 1944. During the period under review 2,951 battle casualties were admitted to the hospital. Thus the incidence of gas gangrene was 11 per thousand. Three clinical types of gas gangrene were seen. Gas abscess, which was observed in 6 cases, was characterized by a swollen tense painful limb with localized edema and induration. On incision a gush of foul smelling pus and gas escaped from a cavity in which a foreign body was often lodged. Response to drainage and chemotherapy was rapid. In clostridial myositis, which was observed in 17 cases, extensive necrosis of muscle was always present with swelling, induration and frequently crepitation. Isolated muscle groups were rarely involved alone. More often there was a widespread infection of all the muscles along the track of the missile. There was severe general toxemia. The 10 cases of fulminating gas gangrene presented a picture of grave toxemia. The local signs were those of severe clostridial myositis with the viability of the limb often in doubt. The general condition varied from semicoma to muttering delirium. In the treatment of gas gangrene, early surgical removal of the source of toxemia is still the basis of treatment. Penicillin used prophylactically, both locally and parenterally, did not prevent the onset of gas gangrene. In treatment penicillin appears to be of extreme value. The usual dosage locally was a total of 17,600 Oxford units per tube. From 300,000 to 500,000 units was the average parenteral dose per case. Most patients were given a course of from 25 to 30 Gm. of sulfathiazole. A few had intravenous sulfadiazine or local sulfonamide powder. Every patient was given from 2 to 4 pints of whole blood and gas gangrene antiserum. The efficacy of the combined use of surgery, penicillin, sulfonamides, blood transfusion and serum was proved by the fact that only one death occurred among the 33 patients, and this occurred after the clostridial infection had been controlled.

Cerebrospinal Meningitis.—The material on which this study is based consists of 60 patients referred to a neuropsychiatric center after attacks of cerebrospinal meningitis; 53 showed symptoms, these being severe in 23, moderately severe in 23 and mild in 7. The duration of symptoms ranged from a week to two years, but most patients were seen from three to six months after the acute illness. In 34 of the 53 with residual symptoms the principal complaint was of headache, in 7 lassitude, in 3 backache and in 3 "effort" symptoms. Ataxia, postural dizziness and depression overshadowed other complaints in 2 cases each. Although the severity of the acute disease is an important factor in determining the severity of the sequelae, there is a stronger positive correlation between the severity of sequelae and the degree of psychoneurotic predisposition. Of the 53 patients with symptoms 4, with very mild sequelae, were returned to duty without further treatment and 49 were treated in convalescent depot for about four weeks. Treatment consisted of psychotherapy and graduated exercises. Of the 49 so treated 45 were returned to duty and 4 invalided. The evidence suggests that the symptom complex should be regarded as a psychosomatic reaction. Suggestion plays a significant part in the production and perpetuation of the symptoms.

Presse Medicale, Paris

53:325-336 (June 16) 1945

Surgical Treatment of Angina Pectoris. P. Wertheimer.—p. 325.
*Statistical Study of 70 Cases of Bronze Diabetes. R. Boulin.—p. 326.
Antivitamin K and Obliteration of Central Artery of the Retina. Y. Girault-Dangely.—p. 327.
Dicumarol, New Anticoagulant. A. P.—p. 328.

Bronze Diabetes.—During a period of fifteen years Boulin saw 70 cases (1.66 per cent) of bronze diabetes among 4,266 persons with diabetes mellitus. There were 59 men and 11 women. Familial pigmentation in the absence of cirrhosis or diabetes mellitus was present in 5 patients (7 per cent). Bronze diabetes differs considerably from diabetes mellitus. It is distinguished by its association with hepatopancreatic sclerosiderosis, by the absence of any hereditary characteristics and by the character of its glycogen-regulatory disturbances, which are as follows: In almost every case the severe diabetes associated with acidosis requires the administration of insulin. The diabetes is progressive and may require increased doses of insulin. Insulin resistance develops quickly and may be progressive. Hypoglycemic accidents resulting in death occurred in 25 of the 70 cases (35 per cent) in spite of the insulin resistance. Bronze diabetes is a disorder of long duration presenting various phases: melanoderma, followed by cirrhosis, which often is latent, and diabetes mellitus as the final and fatal phase of the disease. It may take ten years or even the greater part of the patient's lifetime for the condition to progress until all three conditions may be present at the same time. These findings support the concept of a congenital disorder of metabolism.

Helvetica Medica Acta, Basel

11:887-1010 (No. 7) 1944*

*Dystrophia Myotonica (Steinert's Disease): Importance of Cataract and Disturbances of Metabolism. Therapeutic Effects of Vitamin E. A. Franceschetti and R. S. Mach.—p. 887.
Splenectomy and Effects of Abolition of Splenic Function. J. de Puoz. —p. 927.
Osteodystrophy of Renal Origin: Systematic Study of Skeletons in 138 Cases of Renal Diseases. A. Berner.—p. 961.

Dystrophia Myotonica.—Franceschetti and Mach describe 3 personally observed cases of dystrophia myotonica and stress the importance of myotonic cataract in the differential diagnosis. In the atypical forms of Steinert's disease only the presence of a myotonic cataract permits a definite diagnosis. The biomicroscopic examination of the crystalline lens is indispensable for the differentiation of myotonic dystrophy from other myopathies and particularly from congenital myotonia. The appearance of a creatinuria after an aminoacetic acid tolerance test is of great diagnostic value in that, in progressive muscular atrophy, in congenital myotonia, in myasthenia gravis and in the muscular atrophies of the Charcot-Marie type, creatinuria is nearly always increased after the test, but neither spontaneous nor induced creatinuria is necessarily present in myotonic dystrophy. They observed the favorable effect of vitamin E in a patient with myotonic dystrophy as well as in a case of idiopathic muscular dystrophy (Erb's disease). The therapeutic effect of vitamin E on the muscular function is accompanied by improvement in the creatine metabolism. Myotonic dystrophy has a special place in that some of its symptoms indicate a lesion of endocrine glands while others indicate a nervous origin. It is possible that both of these factors are involved.

Book Notices

Government in Public Health. By Harry S. Mustard, B.S., M.D., LL.D., DeLamar Professor of Public Health Practice and Director, School of Public Health, Faculty of Medicine, Columbia University, New York. Studies of the New York Academy of Medicine, Committee on Medicine and the Changing Order. Cloth. Price, $1.50. Pp. 219, with 3 illustrations. New York: Commonwealth Fund; London: Oxford University Press, 1945.

If civil government is to become a field for scientific inquiry and analysis with the result that public services for health may be carried out at local, state and federal levels on a rational and logical basis instead of by political, financial and in fact emotional opportunism it will be because there are students, practitioners and authors with the courage, imagination and sound philosophy of American citizenship shown by Dr. Mustard.

We can go far and fast with the new potencies of preventive medicine as a partner of civil government if our legislators and the elected officers of local and state governments will take to heart the problems and disabilities inherent in our triangle of authority and expenditures for the public health, so tersely presented by Dr. Mustard. Here we have history of past events, their successes and failures, coupled with current experience of the administrator, the student and the teacher, serving as a background on which a sounder foundation and a nobler structure of great social significance can be built.

This book, one of an important series, was written to inform the leaders in the practice and teaching of medicine of the scope of public health as it has been and may become. It is a clear and unbiased record of that revolution which the knowledge of human biology has demanded in the functions and organization of a society dominated by partisan politics. Of the six chapters the first and last are of special merit, giving as they do the necessary definitions, the philosophy and practical considerations at the beginning, and a summary of trends and discussion of certain needs to close the volume. Chapters two to four deal respectively with federal, state and local health services without fear or favor, and very much to the point for all workers in this field of science applied through government for social progress. The fifth chapter gives a description of the content of a public health program of today.

This book is full of material ready to hand for those who would wish to influence public policy and performance, the promoters, salesmen and disciples of public health. No student or teacher of public health, the general field of medical administration or preventive medicine at the medical school or postgraduate level can afford to go without this book, and we may hope that the public health committee of each county and state medical society will read and accept the good sense so pleasingly set before us. The reviewer is particularly delighted with the unequivocal condemnation of the present position of the Children's Bureau in our federal health structure.

For immediate adoption as a social philosophy let us remember these two sentences: "At present local governments choose whether or not they will organize effective local health service. The time has come to follow precedent and make the provision of effective local health service a requirement." The literary and historical student will be especially intrigued by the quaint texts of the original documents quoted as a frontispage and in the appendix. The book in form as well as in content is to be cordially recommended to physicians, nurses and administrators of official and voluntary health agencies.

New and Nonofficial Remedies, 1945; Containing Descriptions of the Articles Which Stand Accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1945. Issued Under the Direction and Supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Cloth. Price, $1.50. Pp. 760. Chicago: American Medical Association, 1945.

The successive volumes of New and Nonofficial Remedies represent an invaluable service to their profession by a distinguished group of scientists, the Council on Pharmacy and Chemistry. Through the years the membership of this body has changed, but its freely given and impartial devotion to the best interests of rational, scientific therapy is unchanging. In this volume the physician may find the best and most useful of the newer pharmaceutic agents. If a new or not yet official drug is not here described, the physician should hesitate to use it without finding out why it does not appear. If the agent was formerly described in the book and does not appear, the Council considers that it has not fulfilled its promise of usefulness. Fifteen or twenty newly accepted preparations appear. A large number of preparations have been omitted, mainly brands of official preparations. The general statements concerning these pharmacopeial preparations have been retained for the information of physicians.

As stated in the preface, the entire book has been scanned to bring it up to date with the latest medical knowledge. It is noted that the section "Articles and Brands Accepted by the Council But Not Described in N. N. R.," a remnant of which appeared in the 1944 volume, has now entirely disappeared. Many of the official preparations have been transferred to the body of the book and the others deleted. Much medical information is contained in this volume; certainly no other compendium of comparable price contains so much.

Nitrous Oxide-Oxygen Anesthesia: McKesson-Clement Viewpoint and Technique. By F. W. Clement, Major M. C. (A. U. S.). Second edition. Cloth. Price, $4.50. Pp. 288, with 92 illustrations. Philadelphia: Lea & Febiger, 1945.

In the second edition of this book the author has made changes in detail rather than any alterations of the original text. As far as fundamental principles are concerned the story is again one of personal experience and technic employed by the author and his late associate Dr. E. I. McKesson, together with certain suggestions that have been sent to him by some of his friends. He has attempted to cover briefly the history and theory of anesthesia and has tried to present the physiologic aspects of the situations confronting the anesthetist who applies nitrous oxide and oxygen to various types of patients under various conditions. The author has had a wide experience both in civilian practice and in army hospitals. Possession of this book is of considerable value to the general anesthetist, as it brings him into direct line with the latest points of view of the author, who is one of the most skilled administrators of nitrous oxide and oxygen.

Endurance of Young Men: Analysis of Endurance Exercises and Methods of Evaluating Motor Fitness. By Thomas Kirk Cureton, Warren J. Huffman, Lyle Welser, Ramon W. Kireilis and Darrell E. Latham. Monographs of the Society for Research in Child Development, Volume X, No. 1 (Serial No. 40). Paper. Price, $2.50. Pp. 284, with illustrations. Washington, D. C.: Society for Research in Child Development, National Research Council, 1945.

The Society for Research in Child Development associated with the National Research Council has made available a report which represents a two year study made by five members of the University of Illinois School of Physical Education. Three thousand men were tested on twenty-eight endurance exercises, and some of them were tested with organic condition tests. According to this report the step test devised by the Harvard Fatigue Laboratory is a poor exercise for measuring all round athletic endurance. The Army and Navy have used excellent testing events, such as chinning the bar, push ups and the 300 yard shuttle run. According to these studies the mile run is shown to be of the greatest all round value in measuring all the constituents of endurance.

Scientific Societies in the United States. By Ralph S. Bates, Ph.D. A Publication of the Technology Press. Massachusetts Institute of Technology. Cloth. Price, $3.50. Pp. 246. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Ltd., 1945.

The contribution of scientific societies to the advancement of knowledge is one of the finest exemplifications of democracy at work. Much of the intensified progress in science during the war was brought about by scientific organization in which our scientific societies played a conspicuous part. The volume by Dr. Bates considers the subject chronologically, moving from the earliest societies in eighteenth century America to the triumph of specialization in the period between 1866 and 1918 and considering finally the growth of science up to 1944. This was the period during which American societies effected their international relationships—a period which will perhaps culminate in the formation of special sections of the organization of the United Nations devoted to health and science. A final chapter concerns the increase and diffusion of knowledge by means of the scientific societies. An extensive, well arranged bibliography and a fine index complete the work.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

X-RAY OF THYMUS PRIOR TO TONSILLECTOMY

To the Editor:—I have the thymus glands of all children 7 years old and younger x-rayed prior to tonsillectomy. Will you kindly inform me if this precaution is necessary? W. O. Bailey, M.D., Warrenton, Va.

ANSWER.—The caution displayed by the writer is commendable; it is, in fact, displayed by many practitioners in the country if not quite so directly. For instance, children who are under the care of pediatricians and who have their tonsils removed by these pediatricians or who have been referred by them to others for operation are presumed to have had fluoroscopies of the chest on a number of preceding occasions, if not with direct reference to the tonsillectomy or other operation. As to the rationale of this examination, the following may summarize good current opinion: Status thymicolymphaticus is a condition characterized by generalized lymphoid hypertrophy and hypoplasia of the cardiovascular system. The thymus gland may or may not be hypertrophied in this condition. The thymicolymphatic state is a condition which many people think is an adequate explanation for easy death under a variety of circumstances. The presence, however, of an enlarged thymus gland does not mean that the patient suffers from status thymicolymphaticus; its discovery should lead to a search for the other conditions mentioned and its absence does not mean that they may not be present.

In general, then, this means that a special fluoroscopy for the presence of an enlarged thymus gland is not a protection against the sudden and mysterious death said to be associated with status thymicolymphaticus but does mean on the other hand that every patient who submits himself to a surgical procedure of any degree should have a complete physical examination with note made of all important physical observations, including the presence or absence of the thymicolymphatic state.

OXALIC ACID FOR HEMORRHAGE

To the Editor:—Please give information on the use of oxalic acid for hemorrhage. To what extent has it been used and what results have been obtained? Have any ill effects so far been observed in its use?

Jay G. Roberts, M.D., Pomona, Calif.

ANSWER.—The effect of oxalic acid in the control of hemorrhage is still in the experimental stage, and conclusions must await more extensive studies than have yet appeared. Herbst and Weinstein found that there was a decrease in the bleeding and coagulation times thirty minutes after injection of an oxalic acid compound and that this continues in most cases for about an hour and a half after the injection. The prothrombin time does not appear to be significantly affected, which suggests that the action of oxalic acid is on the late phase of the clotting mechanism of the blood. Although some studies with the substance have been encouraging, routine use of the drug for the control of hemorrhage is not yet recommended.

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Steinberg, A.; Segal, H. I., and Parris, H. M.: The Role of Oxalic Acid and Certain Related Dicarboxylic Acids in the Treatment and Control of Hemorrhage, *Ann. Otol., Rhin. & Laryng.* **49**: 1008 (Dec.) 1940.

Herbst, W. P., and Weinstein, J. J.: Observations on the Action of Koagamin, *J. Urol.* **51**: 325 (March) 1944.

THIOURACIL AND THE NORMAL THYROID GLAND

To the Editor:—What is the effect of thiouracil on the normal human thyroid gland? M.D., Florida.

ANSWER.—Adequate data are not available on this point, but the effect is presumably the same as on the thyroid gland of normal animals. In various experimental animals it produces hyperplasia and enlargement of the thyroid, with a reduction in basal metabolism to a myxedematous level. The most plausible explanation is that thiouracil interferes in some way with availability of iodine for the formation of the thyroid hormone. The thyroid gland responds to this artificial iodine deficiency by hyperplasia.

PENICILLIN IN SYPHILIS DURING PREGNANCY

To the Editor:—A white woman aged 45, pregnant two months, has positive Kahn and Wassermann reactions. Both she and her husband are known to have had syphilis for about five years. She has a daughter aged 18. A year and a half ago she gave birth in the eight month of pregnancy to a 4 pound baby, which survived and is now apparently normal. Repeated serologic tests for syphilis have been negative in the children. Prior to the first pregnancy she had received some but inadequate antisyphilitic treatment; during the last pregnancy she received intensive therapy with both arsenic and bismuth compounds. About two days prior to delivery she first noted a beginning jaundice but did not report this to her physician. Her delivery was uneventful, but two days later she had an acute cardiac dilatation with pulmonary effusion. Finally after over a month of hospitalization, during which on several occasions it was felt that she was dying, she made a fairly good recovery; she is still taking digitalis. Because of religious reasons she has refused a therapeutic abortion. I am interested in the use of penicillin and would like an outline as to the dosage and method of use in this case; I feel that because of the previous liver damage and heart condition it would be dangerous to use arsenic in this instance. Has penicillin been used in syphilis during pregnancy? Has it been successful in preventing syphilitic children?

Lieutenant, M. C., A. U. S.

ANSWER.—There is insufficient experience recorded in the medical literature, or indeed available from any source, to give a satisfactory answer to the exact question raised. A patient like that described must be considered to have late syphilis, partially treated. It is not clear whether the cardiovascular disease and liver damage results from syphilis, from a combination of syphilis and treatment or from some other cause, and it is presumed that this might be difficult to determine with certainty. If the cardiovascular or liver damage is the result of active syphilis, then most authorities working in this field would consider penicillin as it is ordinarily employed in the treatment of syphilis contraindicated for fear of therapeutic shock and therapeutic paradox which might result in additional damage to the heart or liver.

The trial of treatment of the syphilitic pregnant woman to insure the birth of a healthy infant has been confined largely to symptomatic early (with primary or secondary lesions) or to early latent (disease definitely known to have existed for less than four years) infection. The results of the use of penicillin for this type of patient have been uniformly good (Lentz, J. W.: Ingraham, N. R., Jr.; Beerman, Herman, and Stokes, J. H.: Penicillin in the Prevention and Treatment of Congenital Syphilis, THE JOURNAL, Oct. 14, 1944, p. 408). Only 1 infant has been shown to be infected thus far when treatment of the mother has been reasonably adequate, although individual series of cases observed are small, numbering less than 50.

Sodium penicillin intramuscularly, dissolved in distilled water or isotonoic solution of sodium chloride, has been used in total dosage of either 1.2 million or 2.4 million Oxford units. It is preferable to give somewhat reduced dosage for the first fifty-eight to seventy-two hours.

Thus, if the latter system is used (i. e. 2.4 million Oxford units total dosage) a schedule which has been successfully used consists in giving 10,000 Oxford units every three hours for the first twenty-four hours, provided the drug is well tolerated, continuing with 20,000 Oxford units every three hours for the second twenty-four hours and finally with 40,000 Oxford units every three hours until the total dosage of 2.4 million Oxford units is reached. This will require from eight to nine days. The patient should be hospitalized during the course of therapy. While such treatment is well tolerated by the average person, it is to be reemphasized that it has not received adequate trial in a patient such as is described.

FATTY TISSUE IN SKIN GRAFT

To the Editor:—Some months ago a man was treated for avulsion of the skin of the dorsum of the left hand by placing the hand in a pocket in the subcutaneous tissue of the abdomen, thus providing the bare area with a covering of normal skin and subcutaneous tissue. Following the release of the hand and the skin of the abdomen, which now serves as a full thickness graft over the dorsum of the hand, the patient gained a moderate amount of weight and there has been an increasing deposit of adipose tissue beneath this skin, rendering flexion of the remaining fingers somewhat limited as the result of this increase in subcutaneous tissue. Is it advisable to dissect away this subcutaneous tissue, and will such procedure result in permanent relief of this disturbance? Will subsequent weight gain be reflected in a similar manner? M.D., Illinois.

ANSWER.—The excess tissue could be largely eliminated by raising two thirds of the flap, cutting the fat entirely away from the hand and as close as possible to the skin (the subcutaneous blood supply is usually good in conditions as described), allow that to heal in place for three weeks, then raise half or two thirds of the way across from the other side and repeat the procedure. If sufficient of the fat-bearing fascia is removed at the operation, the anatomic structure in which fat is stored up will be permanently eliminated.